



## ΠΕ7.2: Οργάνωση Συναντήσεων και Ημερίδων

Παραδοτέο Π7.2

Σ. Ζερβουδάκη, Β. Καραχλέ

Έργο: «Ολοκληρωμένο Σύστημα Υποβρύχιου Οικολογικού Καθαρισμού»

Ακρωνύμιο: ECOHULLCLEAN

Κωδικός έργου: Τ2ΕΔΚ-05287



Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης



## 1. Συναντήσεις μεταξύ των μελών του έργου.

Μέχρι σήμερα έχουν πραγματοποιηθεί 7 διαδικτυακές συναντήσεις. Σκοπός των συναντήσεων αυτών είναι ο συντονισμός της ομάδας και η συνεχής ενημέρωση των μελών της για τις εξελίξεις του προγράμματος. Τα πρακτικά των συναντήσεων για το έτος 2023 παρουσιάζονται παρακάτω:

### Πρακτικά συνάντησης 04/05/2023

#### Θέματα που συζητήθηκαν:

1. Αποτελέσματα δειγματοληψιών πεδίου
2. Προγραμματισμός δειγματοληψιών για τον έλεγχο του οργάνου  
Οι δειγματοληψίες στο πεδίο θα ξεκινήσουν μέσα Μαΐου
3. Ιστοσελίδα του προγράμματος  
Θα πρέπει μεταφραστούν τα κείμενα για να ανέβουν στη σελίδα
4. Παράταση του προγράμματος.  
Το πρόγραμμα ολοκληρώνεται στις 15/8/23.
5. Μελέτη Σκοπιμότητας  
Θα πρέπει να ξεκινήσει άμεσα από τον Αντρέα Κούκιο.
6. Παραδοτέα  
Οι αναλύσεις των δειγμάτων πρέπει να ολοκληρωθούν έως τις 30/7/23. Τα παραδοτέα πρέπει να έχουν ολοκληρωθεί μέχρι τις 30/9/23
7. Αρχές Ιουλίου πρέπει να γίνει πάλι μια συνάντηση προκειμένου να συζητηθούν οι οποίες τελικές τροποποιήσεις του προγράμματος
8. Ύστερα από τον έλεγχο της επιτροπής ζητήθηκε να δώσουμε στα παραδοτέα περισσότερο επιστημονικό ύφος



Ευρωπαϊκή Ένωση  
Ευρωπαϊκό Ταμείο  
Περιφερειακής Ανάπτυξης



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ  
ΑΝΑΠΤΥΞΗΣ ΚΑΙ ΕΠΕΝΔΥΣΕΩΝ  
ΕΙΔΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΔΙΑΧΕΙΡΙΣΗΣ  
ΠΡΟΓΡΑΜΜΑΤΩΝ ΕΤΠΑ & ΤΣ  
ΕΙΔΙΚΗ ΥΠΗΡΕΣΙΑ ΔΙΑΧΕΙΡΙΣΗΣ ΕΠΑΝΕΚ



ΕΠΑΝΕΚ 2014-2020  
ΕΠΙΧΕΙΡΗΣΙΑΚΟ ΠΡΟΓΡΑΜΜΑ  
ΑΝΤΑΓΩΝΙΣΤΙΚΟΤΗΤΑ  
ΕΠΙΧΕΙΡΗΜΑΤΙΚΟΤΗΤΑ  
ΚΑΙΝΟΤΟΜΙΑ



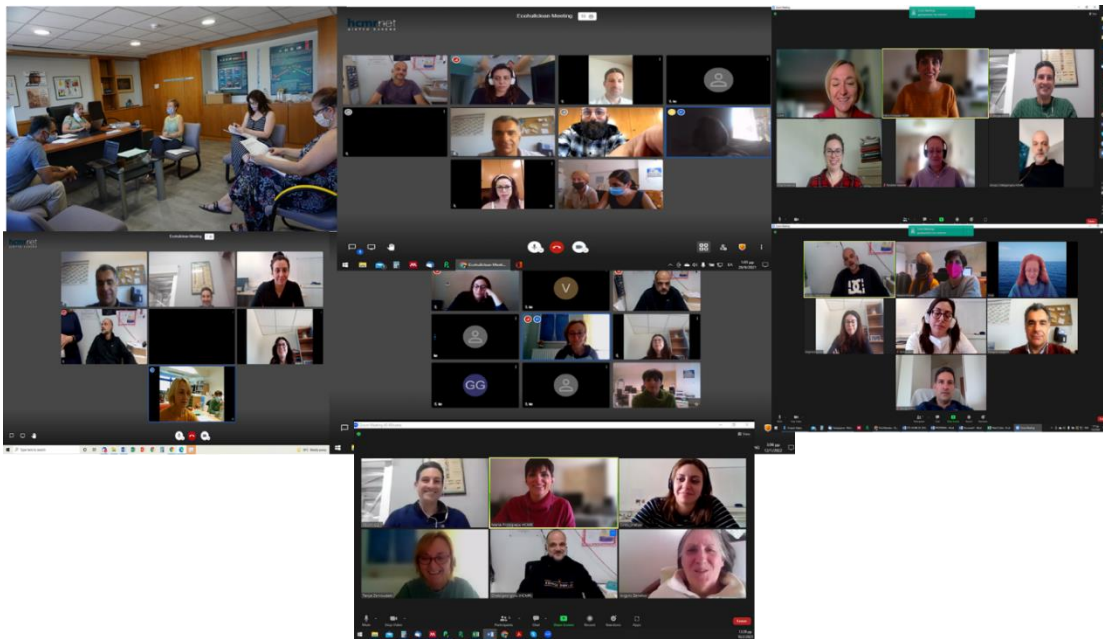
ΕΣΠΑ  
2014-2020  
ανάπτυξη - εργασία - αλληλεγγύη

Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης

## Πρακτικά συνάντησης 07/09/2023

### Θέματα που συζητήθηκαν:

1. Παρουσίαση των αποτελεσμάτων από τις δειγματοληψίες του πεδίου
2. Παρουσίαση των αποτελεσμάτων από τις δειγματοληψίες για τον έλεγχο του οργάνου
3. Παρουσίαση της μελέτης σκοπιμότητας
4. Συζήτηση για την κατάθεση των οικονομικών στοιχείων και από τους δύο φορείς.



## 2. Ημερίδες και Παρουσιάσεις σε συνέδρια:

- Παρουσίαση εργασίας της Μ. Πρωτοπαπά στη συνάντηση εργασίας για τη θαλάσσια βιοεπίστρωση το Νοέμβριο 2022 στη Γαλλία με τίτλο «Biofouling prevention measures and removal practices». Η συνάντηση ήταν διαδικτυακή.



- **Ειδική Συνεδρία:** Χωροκατακτητικά Ξενικά Είδη: μεταφορά με πλοία και σύγχρονες τεχνολογίες. Το ερευνητικό έργο «Ολοκληρωμένο Σύστημα Υποβρύχιου Οικολογικού Καθαρισμού Υφάλων Πλοίων» ECOHULLCLEAN. Η συνεδρία πραγματοποιήθηκε στο Marine and Inland Waters Research Symposium 2022 former Panhellenic Symposium on Oceanography & Fisheries 2 – 18 Σεπτεμβρίου 2022, στο Πόρτο Χέλι Αργολίδας, Ελλάδα.

*Συντονιστές: Σουλτάνα Ζερβουδάκη, Ελληνικό Κέντρο Θαλασσίων Ερευνών  
Αργυρώ Ζενέτου, Ελληνικό Κέντρο Θαλασσίων Ερευνών  
Γιώργος Γκιαζιάς, DIVING STATUS*

Στην προτεινόμενη ειδική συνεδρία παρουσιάστηκαν θέματα που αφορούν τα ΧΞΕ, με έμφαση αυτά που μεταφέρονται με τα πλοία, καθώς και σύγχρονες τεχνολογίες για την απομάκρυνση και διαχείριση της βιοεπίστρωσης. Αυτή ακριβώς είναι και η προσέγγιση του ερευνητικού έργου με το ακρωνύμιο ECOHULLCLEAN ([www.ecohullclean.com](http://www.ecohullclean.com)), που χρηματοδοτείται από το ΕΣΠΑ 2014-2020, «ΑΝΤΑΓΩΝΙΣΤΙΚΟΤΗΤΑ, ΕΠΙΧΕΙΡΗΜΑΤΙΚΟΤΗΤΑ & ΚΑΙΝΟΤΟΜΙΑ» (ΕΠΑΝΕΚ), αποτελέσματα του οποίου παρουσιάστηκαν.



Το πρόγραμμα της συνεδρίας ήταν:

**Day 2 – 18 September 2022, Sunday ROOM 2**

**9:00-10:30 Invasive Alien Species**

Chair: Zervoudaki S., Chatzigeorgiou G.

9:00-9:15 Risk Assessment of non-indigenous species' introduction Into the Saronikos Gulf  
Zenetos A. *et al.*

9:15-9:30 Modelling the spatial distribution of three Red Sea species in the Greek seas Solanou  
M. *et al.*

9:30-9:45 Benthic diversity patterns in 4 major marinas of Greece (with new records of alien  
species)– ALIENPORTS project  
Chatzigeorgiou G. *et al.*

9:45-10:00 The impact of *Lagocephalus sceleratus* (Gmelin, 1789) on small - scale fisheries in  
Crete: preliminary results  
Christidis G. *et al.*

10:00-10:15 Fishers' perceptions on the status and impact of the alien fish *Siganus luridus* and  
*S. rivulatus* in the Aegean and Ionian seas  
Vagenas, G. *et al.*

10:15-10:30 Technical quality and nutritional value of four invasive fish species Grigorakis K.  
*et al.*

➤ **Συνάντηση στον International Maritime Organisation.**

**Seventy-ninth session of the Marine Environment Protection Committee  
(12 to 16 December 2022)**

Εκπρόσωποι του ΕΛΚΕΘΕ και προσκεκλημένοι από το Υπουργείο Εμπορικής Ναυτιλίας (Δρ. Σουλτάνα Ζερβουδάκη και Δρ. Μαρία Πρωτοπαπά) συμμετείχαν από τις 11/12/22 έως τις 16/12/22 ως μέλη της ελληνικής αντιπροσωπείας που συμμετείχε στις εργασίες της 79<sup>ης</sup> Συνόδου της Επιτροπής Προστασίας Θαλασσίου Περιβάλλοντος (MEPC) του Διεθνούς Ναυτιλιακού Οργανισμού (IMO) (**79th Session of Marine Environment Protection Committee of International Maritime Organization - IMO/MEPC 79**), στην ομάδα Ballast Water Review Group.



Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης





Η συμμετοχή εκπροσώπων σε αυτές τις συναντήσεις είναι σημαντική καθώς ένα μεγάλο κομμάτι των παραδοτέων του προγράμματος αφορά την σχεδίαση, κατασκευή και δοκιμή του συστήματος φιλτραρίσματος (FILTRATION SYSTEM). Καθώς δεν υπάρχουν συγκεκριμένες οδηγίες σε παγκόσμιο επίπεδο, προκειμένου να γίνει διαχείριση του υλικού που συλλέγεται κατά τη διαδικασία καθαρισμού και φιλτραρίσματος, πριν την απόρριψη του στο περιβάλλον, αποφασίστηκε να γίνει ο σχεδιασμός του συστήματος σύμφωνα με τις οδηγίες του IMO που αφορούν τον καθαρισμό του έρματος ενός πλοίου (*“International Convention for the Control and Management of Ships’ Ballast Water and Sediments (BWM)”*) και εφαρμόζεται από το 2004.

- **International Council for the Exploration of the Sea ICES Working Group on Introductions and Transfers of Marine Organisms (WGITMO και International Council for the Exploration of the Sea/Intergovernmental Oceanographic Commission of the United Nations Educational, Scientific and Cultural Organization (UNESCO)/ International Maritime Organization (ICES/IOC/IMO) Working Group on Ballast and Other Ship Vectors (WGBOSV)**

Στο πλαίσιο του έργου, διοργανώθηκε η ετήσια συνάντηση των δύο ομάδων εργασίας του ICES για τα ξενικά είδη (WGITMO-Working Group on Introductions and Transfers of Marine Organisms και WGBOSV-Working Group on Ballast and Other Ship Vectors). Η συνάντηση πραγματοποιήθηκε, και για τις δύο ομάδες, στο ξενοδοχείο Divani Palace Acropolis Hotel, και το διάστημα 6-10 Μαρτίου 2023. Οι ημερήσιες διατάξεις των συναντήσεων δίνονται αντίστοιχα.

Στον κύκλο των εργασιών της συνάντησης έγινε παρουσίαση του έργου ECOHULLCLEAN, την Τετάρτη 8 Μαρτίου. Οι συμμετέχοντες στη συνάντηση έδειξαν ιδιαίτερο ενδιαφέρον για το έργο και τα αποτελέσματά του που παρουσιάστηκαν. Αναλυτικά οι παρουσιάσεις που έγιναν είναι οι εξής:

#### Προφορικές παρουσιάσεις:

- Biofouling prevention measures and removal practices (Protopapa M., HCMR)
- ECOHULLCLEAN - in water hull cleaning system with reclaim capabilities for invasive species (Giazlas G., Diving Status)
- Records of NIS in Major Ports and Marinas of Greece" (Chatzigeorgiou G. HCMR)





- Colonisation and succession of NIS assemblages on antifouling coatings"

#### e-Poster

- Qualitative composition of biofouling organisms: A study on commercial vessels from Saronikos Gulf, Greece. (Gratsia E. HCMR).



*Η ομάδα εργασίας του WGITMO-Working Group on Introductions and Transfers of Marine Organisms, Αθήνα 6-8 Μαρτίου 2023.*



Ευρωπαϊκή Ένωση  
Ευρωπαϊκό Ταμείο  
Περιφερειακής Ανάπτυξης



ΕΛΛΗΝΙΚΗ ΔΗΜΟΚΡΑΤΙΑ  
ΥΠΟΥΡΓΕΙΟ  
ΑΝΑΠΤΥΞΗΣ ΚΑΙ ΕΠΕΝΔΥΣΕΩΝ  
ΕΙΔΙΚΗ ΓΡΑΜΜΑΤΕΙΑ ΔΙΑΧΕΙΡΙΣΗΣ  
ΠΡΟΓΡΑΜΜΑΤΩΝ ΕΤΠΑ & ΤΣ  
ΕΙΔΙΚΗ ΥΠΗΡΕΣΙΑ ΔΙΑΧΕΙΡΙΣΗΣ ΕΠΑΝΕΚ

**ΕΠΑΝΕΚ 2014-2020**  
**ΕΠΙΧΕΙΡΗΣΙΑΚΟ ΠΡΟΓΡΑΜΜΑ**  
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**ΕΠΙΧΕΙΡΗΜΑΤΙΚΟΤΗΤΑ**  
**ΚΑΙΝΟΤΟΜΙΑ**



ανάπτυξη - εργασία - αλληλεγγύη

Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης



*Η ομάδα εργασίας του WGBOSV-Working Group on Ballast and Other Ship Vectors, Αθήνα 8-10 Μαρτίου 2023.*

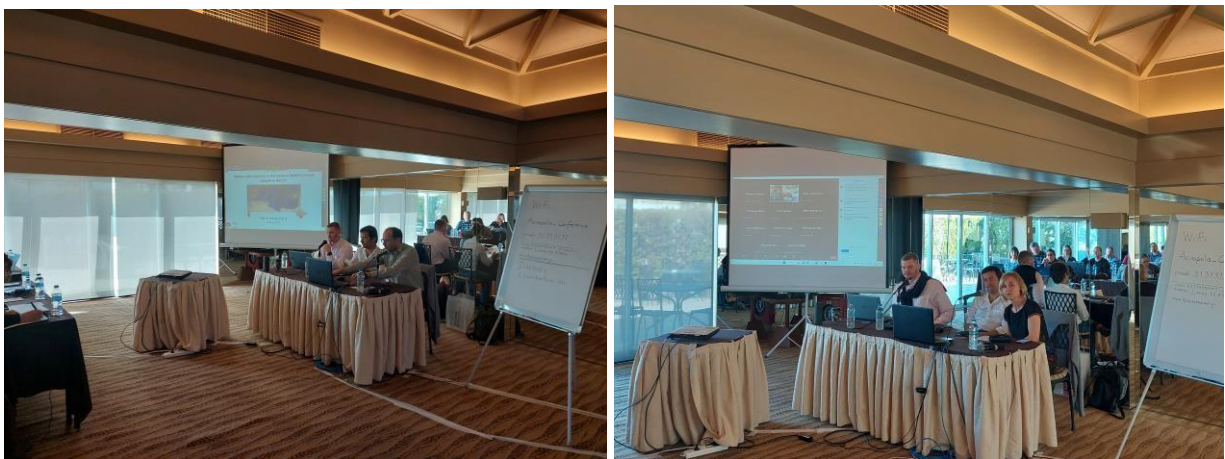
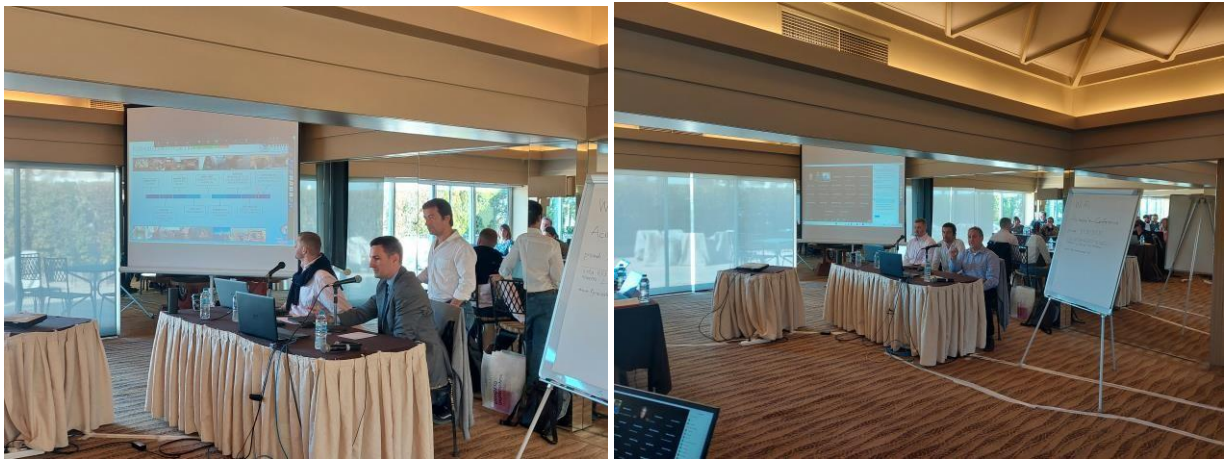


Με τη συγχρηματοδότηση της Ελλάδας και της Ευρωπαϊκής Ένωσης





*Η ομάδα του ECOHULLCLEAN που συμμετείχε στις εργασίες των ομάδων εργασίας του ICES για τα ξενικά είδη, Αθήνα 8-10 Μαρτίου 2023.*



Στιγμιότυπα από τη συνάντηση των ομάδων εργασίας του ICES για τα ξενικά είδη (WGITMO-Working Group on Introductions and Transfers of Marine Organisms και WGBOSV-Working Group on Ballast and Other Ship Vectors), Αθήνα 8-10 Μαρτίου 2023.



- «Ο ρόλος της Ερευνητικής Υποδομής EN.I.R.I.S.S.T. στη Ναυτιλία, την Εφοδιαστική Αλυσίδα και τις Μεταφορές στον 21ο αιώνα» 24-26 Οκτωβρίου 2022, στο Ίδρυμα Ευγενίδου.

Συμμετοχή με ομιλία της Σ. Ζερβουδάκη στην ημερίδα του προγράμματος EN.I.R.I.S.S.T. « Θαλάσσια Ρύπανση και Αλληλεπιδράσεις Ναυτιλίας – Θαλάσσιας Έρευνας 26 Οκτωβρίου 2022, Ίδρυμα Ευγενίδου με τίτλο «ΑΘΟΥΡΥΒΗ ΕΙΣΒΟΛΗ: Η εξάπλωση των θαλάσσιων οργανισμών μέσω του θαλασσέρματος και των υφάλων των πλοίων».

- Συμμετοχή με παρουσίαση στο 3rd International Symposium on Aquatic Mesocosm-Based Research, Antalya, Türkiye (November 7-10, 2023). The theme is "Collaborative Science for Tackling Global Grand Challenges" different aquatic realms

High risk donor ports for IAS introduction with vessels in the eastern Mediterranean. Case of Saronikos Gulf. G. Kalyvioti, A. Zenetos, M. Galanidi

- Προετοιμασία Δημοσίευσης

Risk assessment to identify high-risk voyage origin ports and a watch list for NIS introduction in the Mediterranean with vessels: the case of Saronikos Gulf. Grigoria KALYVIOTI, Marika Galanidi and Argyro ZENETOS Paper to be submitted at International Journal of Applied Research on Biological Invasions (Management of Biological Invasions) with impact factor: 2.282 (2021)



**International Council for the Exploration of the Sea/Intergovernmental Oceanographic Commission of  
the United Nations Educational, Scientific and Cultural Organization (UNESCO)/  
International Maritime Organization (ICES/IOC/IMO)  
Working Group on Ballast and Other Ship Vectors (WGBOSV)**

**MEETING AGENDA  
8-10 March 2023**

**Venue:  
Divani Palace Acropolis Hotel  
19-25 Parthenonos str.  
11742, Athens, Greece**

**Note: All times are shown in local time (Eastern European Time, EET)**

<b>WEDNESDAY 8<sup>th</sup> MARCH</b>		
<b>JOINT MEETING WITH WORKING GROUP ON INTRODUCTIONS AND TRANSFERS OF MARINE ORGANISMS (WGITMO)</b>		
<b>08:30 am EET</b>	<b>Set up Computers and testing connection</b> <a href="#">Click here to join the meeting</a>	<b>30</b>
<b>9:00 am EET</b>	Welcoming remarks: <b>Paraskevi Karachle, Tanya Zervoudaki and Argyro Zenetos</b> (Hosts), <b>Okko Outinen</b> (Chair of WGBOSV), and <b>João Canning-Clode</b> (Chair of WGITMO)	<b>10</b>
	Review of WGBOSV/WGITMO Joint Day agenda, conflict of interest, and meeting etiquette – <b>Okko Outinen &amp; João Canning-Clode</b>	<b>15</b>
	Introduction of participants	<b>15</b>
<b>09:40 am EET</b>	<b>WGBOSV ToR d):</b> Investigate and evaluate relatively understudied aspects of vessel biofouling, such as the effect of microfouling (including species contributing to microbially induced corrosion [MIC]), the release of organisms (including larval stages) from ships during normal operations, and biofouling on recreational or fishing vessels. <b>[WGITMO ToR c):</b> Investigate biofouling as a vector for the introduction and transfer of aquatic organisms on vessels and artificial hard structures, their pressure and impact on the ecosystem with a comparison of prevention or selective mitigation methodologies. <b>ToR lead: Okko Outinen and João Canning-Clode</b>	<b>60</b>
<b>09:40 am EET</b>	Presentation of the ECOHULLCLEAN project – Hosting institute	<b>60</b>
<b>10:40 am EET</b>	<b>Morning break</b>	<b>20</b>
<b>11:00 am EET</b>	Presentation: IMO regulatory updates biofouling – <b>Teo Karayannis</b>	<b>15</b>
	Questions/Discussion	<b>10</b>
<b>11:25 am EET</b>	Presentation: Latest updates regarding In-Water Cleaning, IMO revision of the Biofouling Guidelines and GESAMP WG44 – <b>Mario Tamburri</b>	<b>25</b>
	Questions/discussion	<b>10</b>



<b>12:00 pm</b> <b>EET</b>	Presentation: Effectiveness of antifouling solutions for recreational boat in the context of bioinvasions – <b>Agnese Marchini</b> Questions/Discussion	15 10
<b>12:30 pm</b> <b>EET</b>	<b>Lunch Break (At own cost) – GROUP PHOTO!</b>	<b>60</b>
<b>1:30 pm</b> <b>EET</b>	Inspiring keynote presentation: Marine alien species in the eastern Mediterranean: plague or boon? – <b>Stelios Katsanevakis</b> Questions/Discussion	30 10
<b>2:10 pm</b> <b>EET</b>	<b>WGBOVS ToR e):</b> Evaluate the development of DNA- and RNA-based molecular tools for surveillance and monitoring of ship-borne non-native species, including harmful species. <b>[WGITMO ToR e):</b> Evaluate the development and utilization of DNA- and RNA-based molecular approaches to provide science-based tools for strategic planning, policy development, and operational processes regarding non-native species and bio-logical invasions (including detection and monitoring, reconstruction of patterns and vectors of introduction and spread, assessment of establishment and impact risk, and application for invasive species control) <b>ToR Leads: John Darling and Frédérique Viard</b>	
<b>2:10 pm</b> <b>EET</b>	ToR Review	10
<b>2:20 pm</b> <b>EET</b>	Discussion: Workshop on the effective and operational use of molecular tools (International Conference on Marine Bioinvasions XI, ICMB XI)	10
<b>2:30 pm</b> <b>EET</b>	Presentation: Interactions between maritime traffic and species introductions: an illustration with "Dock mussels", a new genetic lineage present in EU commercial ports – <b>Frédérique Viard</b> Questions/Discussion	15 10
<b>2:55 pm</b> <b>EET</b>	Remote presentation: Application of DNA-based methods for the detection of aquatic NIS: Update and latest results – <b>Carolin Uhlir</b> Questions/Discussion	15 10
<b>3:20 pm</b> <b>EET</b>	<b>Afternoon break</b>	<b>20</b>
<b>3:40 pm</b> <b>EET</b>	Remote presentation: Genetics of Mitten Crabs – <b>Christine Ewers</b> Questions/Discussion	15 10
<b>4:05 pm</b> <b>EET</b>	Presentation: Using genomics to understand the sources - and possible pathways - of invasive <i>Rhithropanopeus harrisii</i> populations – <b>Carolyn Tepolt</b> Questions/Discussion	15 10
<b>4:30 pm</b> <b>EET</b>	Presentation: Invasion genomics allow to unravel invasion dynamics and propagule pressure – <b>Cornelia Jaspers</b> Questions/Discussion	15 10
<b>4:55 pm</b> <b>EET</b>	Next meeting venue/Any other business – <b>GROUP PHOTO!!</b> <b>Extra time for discussion</b>	15
<b>5:20 pm</b> <b>EET</b>	<b>End of Day</b>	
<b>7:00 pm</b> <b>EET</b>	<b>Joint dinner (Daphne's Restaurant, Lyssikratous str. 4, Plaka)</b>	

**THURSDAY 9<sup>th</sup> MARCH**  
**WORKING GROUP ON BALLAST AND OTHER SHIP VECTORS**  
**(WGBOSV)**

<b>08:30 am</b> EET	<b>Set up Computers and testing connection</b> <a href="#">Click here to join the meeting</a>	30
<b>9:00 am</b> EET	<b>ToR b):</b> Provide support to the IMO Ballast Water Management Convention (2004, BWMC) Experience-Building Phase (EBP) by providing input on the validation of compliance monitoring devices, the use of indicative or detailed analysis tools (including the quantification of harmful/target species), or other aspects of the EBP. <b>ToR Lead: Okko Outinen</b>	
<b>9:00 am</b> EET	ToR Review & WGBOSV participation at IMO	20
<b>9:20 am</b> EET	Presentation: IMO regulatory updates on ballast water – <b>Teo Karayannis</b> Questions/Discussion	20 10
<b>09:50 am</b> EET	Remote presentation: Commissioning testing, TRO exceedance and sensor calibration – <b>Lisa Drake</b> Questions/Discussion	20 10
<b>10:20 am</b> EET	<b>Morning break</b>	<b>20</b>
<b>10:40 am</b> EET	Presentation: Assessing the performance of compliance monitoring devices for the analysis of ballast water and under controlled laboratory conditions (2017-2022) – <b>Oscar Casas-Monroy</b> Questions/Discussion	20 10
<b>11:10 am</b> EET	Presentation: Compliance monitoring from a manufacturer’s perspective – <b>John Attridge</b> Questions/Discussion	20 10
	<b>Extra time for discussion</b>	
<b>12:00 pm</b> EET	<b>Lunch Break (At own cost, WGBOSV Group photo)</b>	<b>60</b>
<b>1:00 pm</b> EET	<b>ToR c):</b> Investigate and evaluate the potential effects of shipping on biodiversity in a world transformed by climate change, and provide recommendations regarding the dispersal of organisms by ships, particularly in areas of high biological value (e.g., the Arctic, Baltic, and Mediterranean Seas) <b>ToR Lead: Kimberly Howland and Thomas Therriault</b>	
<b>1:00 pm</b> EET	ToR presentation and review – <b>Thomas Therriault &amp; Kimberly Howland</b>	40
<b>1:40 pm</b> EET	Presentation: Marine invasive alien species in Arctic waters – <b>Kimberly Howland</b> Questions/Discussion	20 10
<b>2:10 pm</b> EET	Remote presentation: Improving genomic tools for detection of species shifts and introductions with changing climate and shipping – a cross latitudinal meta-analysis to identify optimal eDNA detection periods – <b>Anais Lacoursière</b> Questions/Discussion	20 10
<b>2:40 pm</b> EET	<b>Afternoon break</b>	<b>20</b>
<b>3:00 pm</b> EET	Remote presentation: Biofouling in internal seawater systems – <b>Arlie McCarthy</b> Questions/Discussion	20 10

<b>3:30 pm</b> <b>EET</b>	Presentation: Use of eDNA methods to assess biofouling on vessels coming into Arctic ports – <b>Kimberly Howland &amp; Maelle Sevellec</b> Questions/Discussion	20 10
<b>4:00 pm</b> <b>EET</b>	Discussion and reporting under ToR c) <b>Extra time for discussion</b>	20
<b>4:45 pm</b> <b>EET</b>	<b>End of Day</b>	
<b>~6:00pm</b> <b>EET</b>	<b>Social get together &amp; dinner at a local restaurant</b>	

**Friday 10<sup>th</sup> MARCH**  
**WORKING GROUP ON BALLAST AND OTHER SHIP VECTORS**  
**(WGBOSV)**

<b>08:30 am</b> <b>EET</b>	<b>Set up Computers and testing connection</b> <a href="#">Click here to join the meeting</a>	30
<b>9:00 am</b> <b>EET</b>	<b>ToR a):</b> Conduct strategic planning (identify and develop collaborative activities, advance and standardize methods, etc.) to advance research and address knowledge gaps by reviewing national activities and responding to new requests for advice. <b>ToR Lead: Jenni Kakkonen</b>	
<b>9:00 am</b> <b>EET</b>	ToR review and national report templates	30
<b>9:30 am</b> <b>EET</b>	Guest presentation: Pseudodiptomus marinus: An alien species travelling the world – <b>Evangelia Michaloudi</b> (ICES WGEUROBUS) Questions/Discussion	20 10
<b>10:00 am</b> <b>EET</b>	Review of National Activities (2021-2022) – 5 to 10 minutes per country <ul style="list-style-type: none"> <li>• Canada – Kimberly Howland</li> <li>• Croatia – Marijana Katic Pecarevic (Remotely)</li> <li>• Finland – Okko Outinen</li> <li>• France – Amelia Curd</li> </ul>	10 10 10 10
<b>10:40 am</b> <b>EET</b>	<b>Morning break</b> <ul style="list-style-type: none"> <li>• Germany – Stephan Gollasch</li> <li>• Greece – Paraskevi Karachle</li> <li>• Netherlands</li> <li>• Norway – Anders Jelmert</li> </ul>	<b>20</b> 10 10 10 10
<b>12:00 pm</b> <b>EET</b>	<b>Lunch Break (At own cost)</b>	60
<b>1:00 pm</b> <b>EET</b>	<ul style="list-style-type: none"> <li>• Portugal – Cátia Bartilotti (Remotely)</li> <li>• Sweden – Lena Granhag (Remotely)</li> <li>• United Kingdom – Jenni Kakkonen</li> <li>• United States – Mario Tamburri (via Matt First)</li> </ul>	
<b>1:50 pm</b> <b>EET</b>	Any other business	
<b>2:30 pm</b> <b>EET</b>	<b>Close of WGBOSV 2023</b>	

## Terms of Reference for WGBOSV (2022-2024)

ToR	Description	Background	Expected Deliverables
<b>a</b>	Conduct strategic planning (identify and develop collaborative activities, advance and standardize methods, etc.) to advance research and address knowledge gaps by reviewing national activities and responding to new requests for advice.	ICES strategic plan Goal 2: understand the relationship between the impact of human activities (e.g., shipping) and marine ecosystems to estimate pressures and impacts and develop science-based sustainable pathways	Report to ICES. Respond to advice requests, as applicable.
<b>b</b>	Provide support to the IMO Ballast Water Management Convention (2004, BWMC) Experience-Building Phase (EBP) by providing input on the validation of compliance monitoring devices, the use of indicative or detailed analysis tools (including the quantification of harmful/target species), or other aspects of the EBP.	The BWMC aims to minimize the transfer of harmful aquatic organisms within the ballast water of ships. To assess the Convention's implementation, the EBP is underway. In addition to gauging the logistics of the implementation, there are science needs related to the validation of methods and tools that need to be addressed.	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.
<b>c</b>	Investigate and evaluate the potential effects of shipping on biodiversity in a world transformed by climate change, and provide recommendations regarding the dispersal of organisms by ships, particularly in areas of high biological value (e.g., the Arctic, Baltic, and Mediterranean Seas)	This work will contribute to the ICES/PICES Strategic Initiative on Climate Change Impacts on Marine Ecosystems (SICCME); address the Convention on Biological Diversity (CBD) and priority actions identified in the Arctic Council Arctic Invasive Alien Species (ARIAS) Strategy and Action Plan; and be relevant to the ICES high-priority action area of 'Arctic research'.	Contribution to symposium or conference, and a peer-reviewed manuscript.
<b>d</b>	Investigate and evaluate relatively understudied aspects of vessel biofouling, such as the effect of microfouling (including species contributing to microbially induced corrosion [MIC]), the release of organisms (including larval stages) from ships during normal operations, and biofouling on recreational or fishing vessels.	This work will be carried out jointly with WGITMO. Ships' biofouling is, with ballast water, a primary vector of non-native species. As management of such vectors is the only effective way to reduce risks of new introductions, addressing biofouling issues is of high priority in non-native species management.	Strengthen ties to the UNDP-GEF-IMO GloFouling Partnerships project through meeting participation and increased discussion of research aims, report to ICES, and/or publish a technical paper or peer-reviewed manuscript.
<b>e</b>	Evaluate the development of DNA- and RNA-based molecular tools for surveillance and monitoring of ship-borne non-native species, including harmful species.	This work will be carried out jointly with WGITMO. Robust monitoring efforts for vessel-borne biodiversity (including non-native species) is critically important, as is the application of 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 monitoring and compliance testing methods, and although some challenges remain, these tools warrant close scrutiny.	Input on the general applicability or otherwise of such methods to IMO or national regulators through meeting participation, correspondence group and/or technical paper, peer-reviewed manuscript, or workshop.



## Tips for online participants

### To Join the meeting online:

Wednesday, Thursday and Friday:

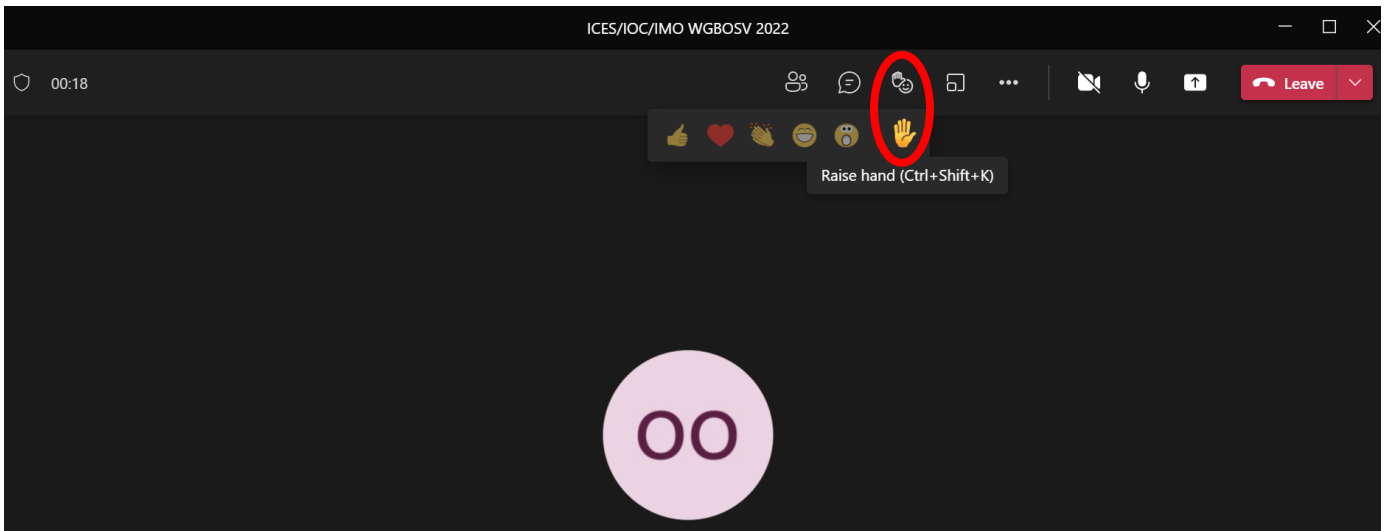
Meeting ID 841 4373 8522

Security checked Waiting Room

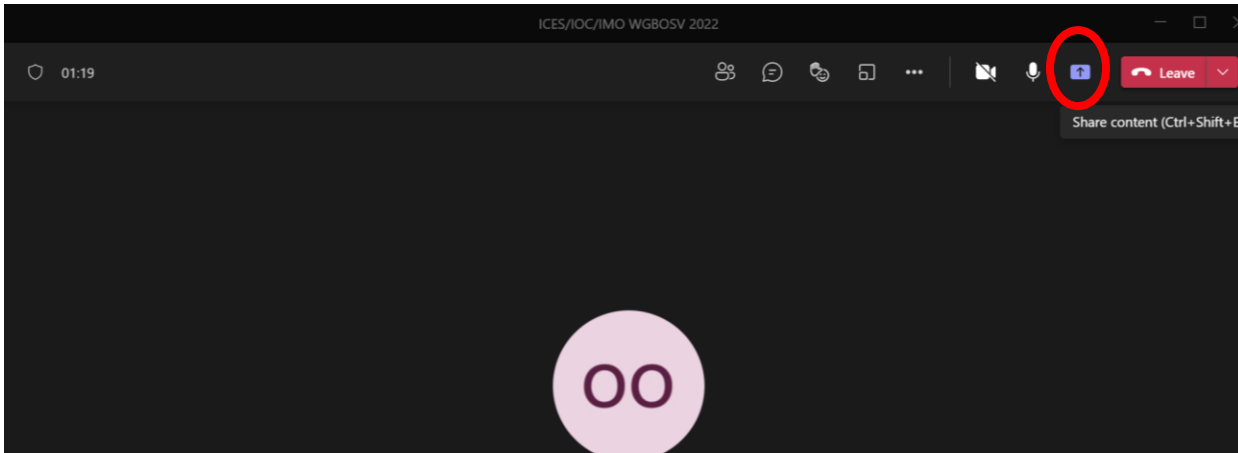
InInvite Link <https://us06web.zoom.us/j/84143738522>

### Instructions below are for MS TEAMS, but Zoom has similar features

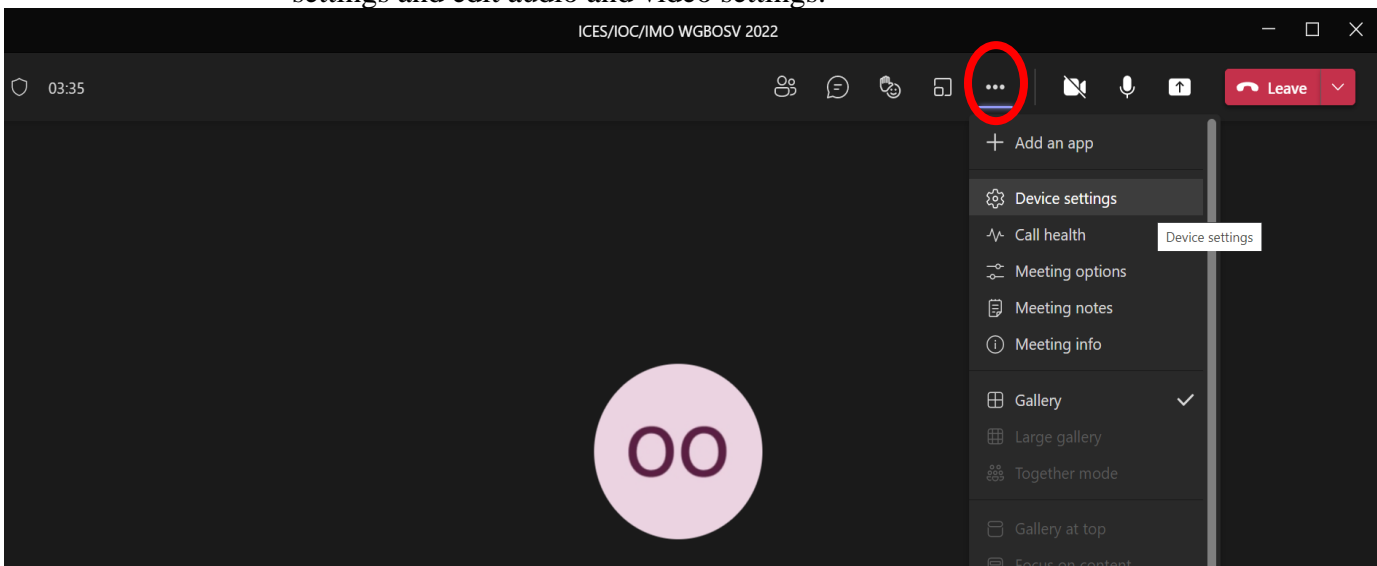
- Please sign in with your full name so everyone knows who is speaking; this is especially helpful to new members and during the joint day, when everyone does not know each other
- Please mute your microphone unless you are speaking
  - o The host/co-host of meeting can mute a participant and then later prompt the participant to unmute themselves (note that due to privacy concerns, hosts/co-hosts *cannot* turn on participants' microphones [or cameras, for that matter])
- To conserve bandwidth, after the initial introduction of new members and guests, please turn off your camera unless you are presenting or asking a question
- **To raise and lower your hand**
  - o On the top of your screen, see “**Reactions**” including a hand icon



- o **To share your screen**
  - There is a “**share**” icon at the top right-hand side of your screen. You can share any content that is open.



- **To edit device settings**
  - There are three dots at the top right-hand side of your screen, where you can select device settings and edit audio and video settings.



- **Chat feature**
  - Since it is distracting to have a discussion going on in the chat panel while a presentation is being delivered or the group is having a verbal discussion, kindly refrain from using the chat function, please.

## Reports

- All WGBOSV reports are available, by year, here: [Library \(ices.dk\)](https://www.ices.dk)

## ICMB XI

- <https://www.marinebioinvasions.info/>

## Time zones

- Since this meeting is hybrid and online participants will be scattered across multiple time zones, for consistency, the agenda uses the local time (EET).
- If you are not aware of it, this site is helpful to keep track of different time zones:

- <https://www.timeanddate.com/worldclock/personal.html> — You can customize this page with clocks from different time zones, and you can change your browser settings so the page is visible every time Google Chrome opens
  - On the top ribbon in Chrome, click on the three vertical dots on the far right-hand side (= Customize and control Google Chrome), click on “Settings”, scroll down to the header “On Startup”, and click “Add a new page”



**International Council for the Exploration of the Sea  
ICES Working Group on Introductions and Transfers of Marine Organisms (WGITMO)**

**MEETING AGENDA  
6-8 March 2023**

Venue: Divani Palace Acropolis Hotel  
Please note: All times are shown in Eastern European Time (EET)

**SUNDAY 5<sup>th</sup> MARCH**

Optional Dinner at local Restaurant – details to be arranged

**MONDAY 6<sup>th</sup> MARCH**

**08:30** Set up Computers and Online connection .30  
Meeting ID 841 4373 8522  
Security checked Waiting Room  
InInvite Link: <https://us06web.zoom.us/j/84143738522>

**09:00** **Opening of the meeting** .20  
Welcoming remarks: **João Canning Clode** (Chair),  
**Paraskevi Karachle, Tanya Zervoudaki and Argyro Zenetos** (Co-Hosts)  
Review of the Day agenda, conflict of interest, and meeting etiquette  
Introduction of Participants  
Review of WGITMO Terms of Reference and Agenda

**09:20** **ToR a):** Advance research, develop collaborations and address surveillance and knowledge gaps in issues related to the introduction and transfer of marine organisms, through annual reviews of national/international activities and responding to advice requests.  
**ToR lead: Cynthia McKenzie**

National reports (Please limit your report to the 10 minutes scheduled.)

Belgium	<b>Francis Kerckhof</b>	.10
Canada	<b>Cynthia McKenzie</b>	.10
Croatia	<b>Josip Mikus</b>	.10
Denmark	<b>Cornelia Jaspers, Kathe Jensen</b>	.10
Estonia	<b>Henn Ojaveer (+ Talk on NIS impacts in Baltic) (online)</b>	.20
Finland	<b>Maiju Lehtiniemi (online)</b>	.10
France	<b>Amelia Curd</b>	.10

**10:40** **Morning break** .20

**11:00** Review of National Activities continued

Germany	<b>Stephan Gollasch</b>	.10
Greece	<b>Paraskevi Karachle</b>	.10
Iceland	<b>Sindri Gíslason</b>	.10



Israel	<b>Bella Galil</b> (online)	.10
USA	<b>April Blakeslee</b>	.10
Norway	<b>Anders Jelmert</b>	.10
Netherlands	<b>Sander Smolders</b>	.10
Portugal	<b>Paula Chainho</b>	.10

<b>12.30</b>	<b>Lunch break</b>	.60
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<b>13.30</b>	<b>ToR a) continues</b>	
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Review of National Activities continued		
Spain	<b>Macarena Ros</b> (online)	.10
Sweden	<b>Rahmat Naddafi</b> (online)	.10
UK	<b>Phil Davison</b>	.10
Italy	<b>Anna Occhipinti</b> (online)	.10

Presentation: An overview of marine non-indigenous species found in the three contrasted biogeographic metropolitan French regions: insights on distribution, origins and pathways of introduction – **Amelia Curd** .20

Questions

Discussion ToR a) for 2023 to 2025 – Changes, modifications and expected deliverables – .20  
ToR Lead: **Cynthia McKenzie**

<b>15:00</b>	<b>Afternoon break</b>	.30
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<b>15:30</b>	ToR b) Evaluate the impact climate change may have on the introduction and spread of non-indigenous marine organisms, including the Arctic environments. <b>ToR Lead: Kimberly Howland and Anders Jelmert</b>	
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Presentation: Contrasting responses of invasive and non-invasive *Mya* species under a simulated marine heatwave: a metabolomic approach - **Chris McKindsey** .20

Discussion

Presentation: Marine invasive alien species in Arctic waters: overview and update - **Kimberly Howland and Tom Christianson** .20

Discussion

Presentation: Crabs without borders: early documentation of a range expanding species in coastal North Carolina – **April Blakeslee** .20

Presentation: Present and future(+50y) risk evaluation for NIS in the Arctic North East Atlantic – **Anders Jelmert** .20

Discussion ToR b) for 2023 to 2025 – Changes, modifications and expected deliverables –  
**ToR Lead: Kimberly Howland and Anders Jelmert** .10

<b>17:00</b>	<b>Close of Day 1</b>	
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## TUESDAY 7<sup>TH</sup> MARCH

<b>08:30</b>	Reconvene for day 2 – Set up Computers and Online connection Meeting ID 841 4373 8522 Security checked Waiting Room InInvite Link: <a href="https://us06web.zoom.us/j/84143738522">https://us06web.zoom.us/j/84143738522</a>	.30
<b>09:00</b>	Presentation: 50 years of WGITMO, - <b>João Canning-Clode</b> <b>Discussion and Questions</b>	.20 .10
<b>09.30</b>	<b>ToR d):</b> Advance knowledge base to further develop indicators to evaluate the status and impact of non-indigenous species in marine environments <b>ToR Lead: Phil Davison and Gordon Copp</b>	
	Presentation: High Risk Invasive Species Contingency Plan in action, measures taken after <i>Styela clava</i> record in Scapa Flow, <b>Jenni Kakkonen</b> Discussion	.20
	Presentation: Update on ToR 'd' – recent progress & way forward – <b>Phil Davison, Gordon Copp, Lorenzo Vilizzi &amp; Bella Galil</b>	.20
	Discussion ToR d) for 2023 to 2025 – Changes, modifications and expected deliverables – <b>Phil Davison and Gordon Copp</b>	.20
<b>10.30</b>	<b>Morning break</b>	.30
<b>11.00</b>	<b>ToR f):</b> Investigate the role of human produced marine debris as a vector and facilitator for the introduction and spread of non-indigenous species (NIS) <b>ToR Lead: João Canning-Clode</b>	
	Presentation: Could seafloor litter be facilitating the spread of non-natives? A preliminary study in UK waters, <b>Peter Barry</b> Discussion	.20
	Presentation: Introducing DeNIS - Global Database on Marine Debris and Non-Indigenous Species, <b>João Canning Clode</b> Discussion	.20
	Discussion ToR d) for 2023 to 2025 – Changes, modifications and expected deliverables - <b>João Canning-Clode</b>	.20
<b>12.00</b>	<b>Lunch break</b>	.90
<b>13.30</b>	<b>ToR g):</b> Investigating best practices to minimize the role of aquaculture as a vector for the introduction and transfer of NIS. This would include both aquaculture target NIS and hitchhikers (biofouling and interstitial parasites and pathogens). Impacts of NIS on aquaculture and on ecosystems will be addressed. <b>ToR Lead: Paula Chainho and Cynthia McKenzie</b>	
	Presentation: Ten years of vector and pathway-based alien species monitoring in NW Europe for the development and optimization of aquaculture and shipping related alien species management in the Netherlands. <b>Arjan Gittenberger</b> Questions	.20

	Presentation: Mitigation measures to reduce the risk of introduction and spread of aquatic invasive species through shellfish and macroalgae movements. <b>Nathalie Simard</b>	.20
	Questions	
	Presentation: Dutch policy rule setup in 2012 for the transport and import of shellfish with the aim of minimizing the risk of the introduction and spread of NIS/alien species. <b>Arjan Gittenberger</b>	
	Questions	.20
<b>14.30</b>	<b>Afternoon break</b>	<b>.30</b>
<b>15.00</b>	<b>ToR g): continues</b> <b>ToR Lead: Paula Chainho and Cynthia McKenzie</b>	
	Presentation: The arrival and explosion of invasive tunicates on mussel aquaculture in a coastal lagoon: what lessons can we learn? <b>Paula Chainho</b>	.20
	Questions	
	Discussion ToR g) for 2023 to 2025 – Changes, modifications and expected deliverables - <b>Paula Chainho and Cynthia McKenzie</b>	.10
	<b>Other Business</b>	.10

**WEDNESDAY 8<sup>th</sup> MARCH**  
**JOINT MEETING WITH WORKING GROUP ON BALLAST AND OTHER**  
**SHIP VECTORS**

<b>08:30</b>	<b>Set up Computers and testing connection</b> Meeting ID 841 4373 8522 Security checked Waiting Room InInvite Link: <a href="https://us06web.zoom.us/j/84143738522">https://us06web.zoom.us/j/84143738522</a>	30
<b>9:00</b>	Welcoming remarks: <b>Paraskevi Karachle, Tanya Zervoudaki and Argyro Zenetos</b> (Hosts), <b>Okko Outinen</b> (Chair of WGBOSV), and <b>João Canning-Clode</b> (Chair of WGITMO)	10
	Review of WGBOSV/WGITMO Joint Day agenda, conflict of interest, and meeting etiquette – <b>Okko Outinen &amp; João Canning-Clode</b>	15
	Introduction of participants	15
<b>09:40</b>	<b>WGITMO ToR c):</b> Investigate biofouling as a vector for the introduction and transfer of aquatic organisms on vessels and artificial hard structures, their pressure and impact on the ecosystem with a comparison of prevention or selective mitigation methodologies. <b>[WGBOSV ToR d]):</b> Investigate and evaluate relatively understudied aspects of vessel biofouling, such as the effect of microfouling (including species contributing to microbially induced corrosion [MIC]), the release of organisms (including larval stages) from ships during normal operations, and biofouling on recreational or fishing vessels. <b>ToR leads: João Canning-Clode and Okko Outinen</b>	
<b>09:40</b>	Presentation of the ECOHULLCLEAN project – Hosting institute	60
<b>10:40</b>	<b>Morning break</b>	<b>20</b>
<b>11:00</b>	Presentation: IMO regulatory updates biofouling – <b>Teo Karayannis</b>	15
	Questions/Discussion	10
<b>11:25</b>	Presentation: In-Water Cleaning System Testing Guidelines – <b>Mario Tamburri</b>	25
	Questions/discussion	10
<b>12:00</b>	Presentation: Effectiveness of antifouling solutions for recreational boat in the context of bioinvasions – <b>Agnese Marchini</b>	15
	Questions/Discussion	10
<b>12:30</b>	<b>Lunch Break (At own cost)</b>	<b>60</b>
<b>13:30</b>	Inspiring keynote presentation: Marine alien species in the eastern Mediterranean: plague or boon? <b>Stelios Katsanevakis</b>	30
	Questions/Discussion	10
<b>14:10</b>	<b>WGITMO ToR e):</b> Evaluate the development and utilization of DNA- and RNA-based molecular approaches to provide science-based tools for strategic planning, policy development, and operational processes regarding non-native species and bio-logical invasions (including detection and monitoring, reconstruction of patterns and vectors of introduction and spread, assessment. <b>[WGBOSV ToR e]):</b> Evaluate the development of DNA- and RNA-based molecular tools for surveillance and monitoring of ship-borne non-native species, including harmful species. of establishment and impact risk, and application for invasive species control) <b>ToR Leads: John Darling and Frédérique Viard</b>	
<b>14:10</b>	Review ToR objectives and deliverables	10
<b>14:20</b>	Discussion: Workshop on the effective and operational use of molecular tools (International Conference on Marine Bioinvasions XI, ICMB XI)	10

<b>14:30</b>	Presentation: Interactions between maritime traffic and species introductions: an illustration with "Dock mussels", a new genetic lineage present in EU commercial ports – <b>Frédérique Viard</b>	15
	Questions/Discussion	10
<b>14:55</b>	Remote presentation: Application of DNA-based methods for the detection of aquatic NIS: Update and latest results – Carolin Uhlir	15
	Questions/Discussion	10
<b>15:20</b>	<b>Afternoon break</b>	<b>20</b>
<b>15:40</b>	Remote Presentation: Genetics of Mitten Crabs. <b>Christine Ewers</b>	15
	Questions	10
<b>16:05</b>	Presentation: Using genomics to understand the sources - and possible pathways - of invasive <i>Rhithropanopeus harrisii</i> populations. <b>Carolyn Tepolt</b>	15
	Questions	10
<b>16:30</b>	Presentation: Invasion genomics allow to unravel invasion dynamics and propagule pressure – <b>Cornelia Jaspers</b>	15
	Questions/Discussion	10
<b>16:55</b>	Next meeting venue/Any other business (GROUP PHOTO!)  <b>Extra time for discussion</b>	15
<b>17:20</b>	<b>End of Day</b>	
<b>19:00</b>	<b>Joint dinner (Location TBA)</b>	



	<p><b>Αθόρυβη εισβολή: Η εξάπλωση των θαλάσσιων οργανισμών μέσω του θαλασσέρματος των πλοίων</b> Δρ. Σουλτάνα Ζερβουδάκη (Ινστιτούτο Ωκεανογραφίας, ΕΛΚΕΘΕ)</p> <p><b>Βιολογία Διατήρησης και Θαλάσσιες Προστατευόμενες Περιοχές στις Ελληνικές Θάλασσες</b> Καθ. Δρόσος Κουτσούμπας / Καθ. Στέλιος Κατσανεβάκης (ΤΩΘΒΕ, Πανεπιστήμιο Αιγαίου)</p> <p><b>Αέριες εκπομπές από τη ναυτιλία και η χρήση προσεγγιστικού υπολογιστικού μοντέλου για την καταγραφή τους στο πλαίσιο της υποστήριξης της έρευνας για τον Ελλαδικό θαλάσσιο χώρο</b> Καθ. Νικόλαος Βεντικός (Σχολή Ναυπηγών Μηχανολόγων Μηχανικών Ε.Μ.Π.)</p> <p><b>Η επίπτωση των συστημάτων καθαρισμού καυσαερίων ναυτιλίας (scrubbers) στο θαλάσσιο περιβάλλον</b> Καθ. Ευαγγελία Κρασσκοπούλου (ΤΩΘΒΕ, Πανεπιστήμιο Αιγαίου)</p> <p><b>Μετάβαση ναυτιλίας στην πράσινη εποχή</b> κ. Πάνος Ζαχαριάδης, Μηχανολόγος-Μηχανικός, Ναυπηγός</p> <p><b>Πράσινη/ψηφιακή μετάβαση στη ναυτιλία και ανθρωπίνος παράγοντας</b> κ. Κώστας Τριανταφύλλου (Ελληνική Ένωση Προστασίας Θαλάσσιου Περιβάλλοντος)</p> <p><b>Υπηρεσία Πληροφόρησης Ναυτιλιακών Επιπτώσεων &amp; Ρύπανσης (ECOMARPOL - ENIRISST)</b> Δρ. Αναστασία Πατέρα (ΤΩΘΒΕ, Πανεπιστήμιο Αιγαίου)</p>
12:30 – 13:00	Συζήτηση - Περίληψη συμπερασμάτων - Κλείσιμο ημερίδας
13:00 – 13:45	Ελαφρύ Γεύμα