GESAMP

Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection

GESAMP 52/4/6
27 June 2025
ENGLISH ONLY

52nd session
Agenda item 4

PLANNING OF GESAMP ACTIVITIES

Biofouling management

Final Report of the Chair of Working Group 44

1 Working Group 44 (WG 44) was established during GESAMP's 46th annual session in September 2019 with its terms of reference formally approved in April 2019. The group's overall objective is to provide a global overview of the impact of biofouling and its role for introduction and spread of non-indigenous species, while evaluating mitigation concepts and strategies to support IMO's GloFouling Partnership initiative.

2 The group is co-sponsored by IOC/UNESCO (Technical Secretary Mr. Henrik Enevoldsen) and IMO (Technical Secretary Mr. John Alonso) with Professor Mario Tamburri from the University of Maryland Center for Environmental Science, United States, serving as Chair. Originally comprising 17 members (see annex) under the leadership of Dr. Katja Broeg, with Professors Tamburri and Pei-Yuan Qian as Vice-Chairs, the group produced a draft report within its first year of operation.

3 Following Dr. Broeg's resignation in August 2021, key stakeholders including IOC/UNESCO, IMO, and the remaining leadership, convened in September 2021 to reassess the work program. This meeting resulted in the decision to engage external consultant Dr. Jake Rice (Canada), an experienced specialist with credentials from IPPC, IPBES, and various Canadian working groups, to assist with report reorganization and peer review processes.

4 Under Professor Tamburri's chairmanship (elected May 2022) and with Dr. Rice's support, the group implemented monthly meetings from June 2022 onwards with the participation of IOC/UNESCO and IMO.

5 The working group agreed on a revised outline and restructuring of the report and the extension of the deadline for the completion of the report no later than December 2023 The main focus of the report was on biofouling's role of in each sector as vectors of Non-native Invasive Species (NIS), and by adopting a thematic structure the report would address; a) NIS transmission and impact , b) NIS mitigation of risks/removal, and 3) coating technologies' the benefits and environmental risks. Dr. Rice, and Professor Tamburri led the document restructuring effort while the full membership continued to review by contributing case studies, identifying gaps and recommending possible solutions.

6 The working group advanced its work through a three-day in-person meeting in Copenhagen (February 2023), where members conducted a comprehensive section by section review of the draft report. The meeting identified knowledge gaps were and established drafting teams to address recommendations, research priority, and knowledge gaps. The group maintained momentum through monthly virtual meetings from February to June 2023

that culminated in a draft report submitted to IOC-UNESCO and GESAMP for review in July 2023.

7 The draft report underwent extensive peer-review in September 2023. Incorporating approximately ten sets of comments from external peer-reviewers, the IMO GloFouling Program and GESAMP Members. These inputs enhanced the report's quality before its final submission to GESAMP in March 2024. The final report titled "Marine Biofouling: Non-Indigenous Species and Management Across Sectors" was released as a GESAMP publication in August 2024.

8 Furthermore, the working group developed a draft Summary for Policy Makers to accompany the Marine Biofouling: Non-Indigenous Species and Management Across Sectors report, scheduled for finalization and release by the end of 2025.

9 The WG Chair further represented IOC-UNESCO at key international events, including the Global Project Task Force Meeting and the Women in Maritime - Biofouling Management Workshop of the GEF-UNDP-IMO GloFouling Partnerships and TEST Biofouling Projects in Bali, Republic of Indonesia, (10 to 13 March 2025). An IOC-UNESCO progress report on GloFouling-related projects was presented, and WG support for GloFouling and a potential follow-on program was communicated.

10 With no additional requests from IMO or IOC-UNESCO for technical support on issues associated with biofouling and nonindigenous species, WG 44 will formally conclude its work during GESAMP's 52nd session.

Action requested of GESAMP

11 GESAMP is invited to note the information provided and to take action as appropriate.

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ANNEX

WG 44 MEMBERS

Name	Surname	Institution	Country	Subject
Joop	Coolen	Wageningen University	Kingdom of the Netherlands	Oil and Gas
Andrew	Want	Heriot Watt University	United Kingdom	Renewables
Pedro	Almeida Vinagre	WavEC Offshore Renewables	Portugal	Constructions
Serena	Teo	National University of Singapore (NUS)	Singapore	Aquaculture
Youna	Lyons	Centre for International Law (NUS)	Singapore	Environmental Governance
Nina	Blocher	SINTEF	Norway	Aquaculture
Kamal	Ranatunga	University of Sri Jayewardenepura	Sri Lanka	Ports
Agnese	Marchini	Universita di Pavia	Italy	Marinas
Koebraa	Peters	Stellenbosch University	South Africa	Boating
Mario	Tamburri	University of Maryland Center for Environmental Science	United States	Shipping
David	Smith	Plymouth Marine Laboratory	United Kingdom	Shipping
Marnie	Campbell	Murdoch University	Australia	biosecurity socioeconomy
Evangelina	Schwindt	Centro Nacional Patagonico	Argentina	Bioinvasions, marinas
Hiroshi	Kawai	Kobe University Research Center for Inland Seas	Japan	Bioinvasions
Jung-Hoon	Kang	KIOST (Korea Institute of Ocean Science and Technology)	Republic of Korea	Risk assessments

Former members

Name	Surname	Institution	Country	
Pei-Yuan	Qian	Hong Kong University of Science and Technology	China	General biofouling aspects, Impact
Anna	Yunnie	Plymouth Marine Laboratory	United Kingdom	Management
Katja	Broeg	Maritime and Hydrographic Agency (BSH)	Germany	General biofouling aspects, Impact. Former chair of the WG

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