



PLANNING OF GESAMP ACTIVITIES:

BIOFOULING MANAGEMENT AND NON-INDIGENOUS SPECIES

Report of the Chair of Working Group 44

1 Working Group 44 (WG 44) was established, in principle, during GESAMP 46. The group's Terms of Reference (ToR) were also formally approved at the session. The overall objective of WG 44 is to develop a wider understanding of the role of all maritime industries in introduction and spread of non-indigenous species (NIS) via biofouling. It aims at providing a global overview regarding impact of biofouling as well as mitigation concepts and strategies and thereby supporting IMO (and its GloFouling Partnerships), IOC-UNESCO and other agencies related to marine biofouling. Amongst others, output from this WG will contribute to the review of the IMO Biofouling Guidelines conducted within the framework of IMO's PPR Sub-committee, as well as other UN processes associated with SDG 14 and Aichi Target 9.

2 Since the formal launch of WG 44, accomplishments to date have centred on:

- .1 identification of chair for WG 44, administrative coordination and leadership, and identification and invitation of the WG 44 membership; and
- .2 development of a preliminary work plan, based on the approved ToR (see annex 1)

3 WG 44 is led by IOC-UNESCO (Technical Secretary for the WG: Mr. Henrik Enevoldsen) and co-sponsored by IMO (GEF-UNDP-IMO GloFouling Partnerships), Dr. Katja Broeg (German Federal Maritime and Hydrographic Agency (BSH)) was invited to serve as WG 44 Chair. The Chair and IOC/IMO/GESAMP/GloFouling Secretaries held a meeting by teleconference in June to introduce the chair to basic principles of GESAMP and its WGs, and discuss considerations for the choice of members, work plan and -mode. A list of potential candidates for membership was provided to the chair, who made proposals based on the list with additional suggestion of two candidates. Candidates represent all maritime sectors dealing with/ impacted by biofouling, worldwide expertise, and gender equality. After nomination, they were invited to serve the working group (see annex 2, list of WG 44 nominated experts).

4 A first meeting of WG 44 is scheduled for September-October 2020. WG members will be introduced, the Vice-chair/co-Chair will be elected, the TOR will be reviewed, and the work plan will be discussed, as well as a working mode under the current pandemic conditions, e.g. distribution of responsibilities regarding the single ToR, organization of thematic sub-groups. As basis for the subsequent work, it is also planned to discuss a draft outline of the report.

Action requested of GESAMP

5 GESAMP is invited to consider the information provided and to take action as appropriate.

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ANNEX 1

Terms of Reference for WG 44

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- 1 Comprehensive identification and description of both primary and secondary pathways for the transfer of NIS, including, but not limited to:
 - a. fishing (e.g. ships, gear, lines);
 - b. aquaculture (e.g. structures, cages, buoys, netting);
 - c. shipping (e.g. hulls, niche areas, propellers, ropes, anchors);
 - d. other shipping (e.g. recreational boating, recreational fishing, Aids to Navigation);
 - e. marine offshore operations (e.g. offshore platforms and structures);
 - f. ocean renewable energy generation (e.g. underwater turbines, shafts);
 - g. ocean monitoring (e.g. measuring instruments); and
 - h. coastal industry infrastructure (e.g. ports, marinas, cooling towers, water purifying units)
- 2 Description and assessment of impacts on biodiversity (alteration of biodiversity) of the introduction and/or spread of NIS via the identified pathways.
- 3 Description and assessment of impact of and costs resulting from the introduction and/or spread of NIS via the identified pathways (economic loss and/or alteration of assets; management costs including cost of preventative and reactive measures/mitigation strategies) on human health, social activities and the economy (such as fisheries, aquaculture, fish processing, tourism and related activities and businesses).
- 4 Provision of an analysis of best management approaches within impacted industries, including the use of emerging technologies, techniques and methods to prevent or reduce the introduction and/or spread of NIS and water contamination resulting from cleaning activities.
- 5 Provision of recommendations to reduce or prevent the introduction or spread of NIS.
- 6 Identification of data gaps, in relation to ToR 1 to 4 above, and prioritization for further work:
 - a. Consider additional work that may be useful to be carried out by the Working Group beyond what is listed above;
 - b. Peer review of the draft report required; and
 - c. Provisions for publication, dissemination and outreach.

ANNEX 2

WG 44 nominated experts

Name	Surname	Institution	Country	Subject
Deborah	Peach	Woodside Energy Limited	Australia	Oil and Gas
Andrea	Copping	Marine Sciences Laboratory, Pacific Northwest Laboratory	United States	Renewables
Teresa	Simas	WavEC - Offshore Renewables, Dept. of Marine Environment and Public Policies	Portugal	Marine structures
Élise	Lacoste	University of French Polynesia	French Polynesia	Aquaculture
Nina	Blocher	SINTEF	Norway	Aquaculture
R. R. M. K. P.	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	Environmental impact of bioinvasion socioeconomy
Pei-Yuan	Qian	Hong Kong University of Science and Technology	China	General biofouling aspects
Evangelina	Schwindt	Centro nacional Patagonico	Argentina	Bioinvasions, marinas
Gregory	Ruiz	Smithsonian Environmental Research Center (SERC)	United States	Shipping, invasion ecology
Anna	Yunnie	Plymouth Marine Laboratory	United Kingdom	Non-native biology
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