

## Working Group on Environmental Interactions of Aquaculture (WGEIA)

2018/MA2/ASG02 A Working Group on Environmental Interactions of Aquaculture (WGEIA), chaired by Terje Svåsand, Norway, will be established and will work on ToRs and generate deliverables as listed in the Table below.

	Meeting dates	Venue	Reporting details	Comments (change in Chair, etc.)
Year 2018	10–14 December	ICES HQ, Copenhagen, Denmark	Interim report by 1 March	
Year 2019	3–5 September	Stirling, Scotland	Interim report by 30 November	
Year 2020	5-7 May	By correspondence	Final report by 16 June	

### ToR descriptors

ToR	Description	Background	<a href="#">Science Plan codes</a>	Duration	Expected Deliverables
a	Review of laws and regulatory standards for monitoring and managing environmental impacts of marine aquaculture, and the corresponding thresholds values established by contributing ICES countries with the aim of improving current management options.	<p>Understanding environmental impacts of aquaculture and how they meet, or do not meet legal environmental mandates is limiting further sustainable growth. First, an understanding of the legal environmental drivers which impact marine aquaculture and how they differ among ICES countries is needed. Consistent and transparent science-based management tools to ensure compliance with environmental laws and to build public confidence in the aquaculture industry are needed. Tools based on models, indicators, threshold values and/or monitoring programmes are needed for impacts requiring management in the majority of ICES countries. Examples may include:</p> <ul style="list-style-type: none"> <li>• Spread of pathogens, incl. pest management</li> <li>• Escapes and genetic interactions</li> <li>• Nutrients and organic loads</li> <li>• Habitat and biodiversity interactions</li> <li>• Animal welfare</li> </ul> <p>What use do ICES countries currently make of these management tools and where is improvement possible?</p>	5.6, 7.4	years 1 & 2	Outputs of benchmarking review presented in 2018 & 2019 interim reports.
b	Recommendations for prioritized research to elucidate knowledge gaps in aquaculture-environment interactions needed for effective	There is a need to move beyond the letter of environmental laws to address the spirit of environmental responsibility. The number of studies and reviews in the fields of aquaculture and environment interactions have been increasing during the last 10-20 years, but still there are many	2.1, 5.6	1&2 year	A prioritized list of current paradigms related to aquaculture/environment interactions for all types of marine aquaculture and research to elucidate

	industry regulation.	knowledge gaps. In addition, there is need to synthesize what is known in some areas into working paradigms and list key environmental interactions in a matrix of species type by production system. To develop the field further, we need continued focus on international cooperation, within the priority thematic areas.			knowledge gaps. The report will include suggestions for project proposals and/or ToR for new EGs. Outputs will form part of the interim report in 2019 and final report in 2020
c	Recommendations for risk and benefit assessment methods and models to assess trade-offs associated with aquaculture scenarios	Methods for risk and benefit assessments are not very well developed for marine ecosystems and aquaculture. Building on results from ToR b, WGEIA aims to review and recommend methods and models for assessments including environmental impacts of aquaculture production.	2.1, 5.6, 5.8	year 2&3	Final report in 2020 and an ICES viewpoint and/or publication covering ToR a, b and c with highlighted examples.
d	International cooperation	WGEIA aims to encourage development of at least one international project according to the prioritized research areas in ToR b or c	NA	year 3	Report status at ASC 2020/final report 2020

### Summary of the Work Plan

Year 1	Two of reference a (Benchmarking legal standards and monitoring) and b (prioritized terms research) will be initiated in the starting year
Year 2	Terms of reference a) and b) will be further developed and reported. and reference c (Assessment methods and models) will be initiated.
Year 3	Terms of reference c and d (International cooperation) will be reported. Synthesis publication will be produced.

### Supporting information

Priority	The current activities of this Group will continue to lead ICES into issues related to aquaculture including elucidating the legal structure under which the environmental interactions of aquaculture are managed in different ICES countries. Scientific work on ecosystem interactions will lay the scientific foundation for further sustainable aquaculture growth to meet or surpass legal requirements. Consequently, these activities are considered to have a high priority.
Resource requirements	Hosting of the first meeting in Copenhagen.
Participants	The Group will be established of 15-25 experts of aquaculture - environment interactions, regulators, legal experts and others
Secretariat facilities	None.
Financial	No financial implications.
Linkages to ACOM and groups under ACOM	This project sets the stage for future advice products from ICES as governments need to manage aquaculture development based upon the requirements of various environmental laws and regulations. Viewpoint documents will provide an example of the types of advice products ICES can produce for aquaculture.
Linkages to other committees or groups	There is a very close working relationship with all the groups of the Aquaculture Steering Group. We will seek to form links with the Working Group on Socio-Economic Dimensions of Aquaculture (WGSEDA) Working Group on Pathology and Diseases of Marine Organisms (WGPDMO), Working Group on Application of Genetics in Fisheries and Mariculture (WGAGFM), Working Group on Scenario Planning on Aquaculture (WGSPAQ), and Working Group on Ecological Carrying

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Capacity in Aquaculture (WGECCA). It is also very relevant to the Working Groups, WGHABD, WGITMO, WG Benthic Ecology

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Linkages to other organizations

OSPAR, NASCO, EAFP, EFARO, EATiP, FAO, EU (EUMAP regulation), NOAA, DFO.

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