

2019 Resolutions for publications

2019 Resolutions for publications	1
1 Resolutions for CRR publications	2
Report covering the output and documenting the outcomes from the ICES workshops “Conflicts and Coexistence in Maritime Spatial Planning (MSP)” (WKCCMSP 2016) and “Coexistence and synergies in MSP” (WKCSMSP 2018).....	2
Status Report on Harmful Algal Events.....	3
Marine Aggregate Extraction and the Marine Strategy Framework Directive: A review of existing research	6
2 Resolutions for TIMES publications	8
Report on measuring nuclear abnormalities in mussel haemocytes and fish erythrocytes	8
Protocol for the verification of ballast water compliance monitoring devices	9
ICES survey protocols – objectives, design and methodology for acoustic surveys in ices areas 6, 7, 8 and 9.....	10

1 Resolutions for CRR publications

Report covering the output and documenting the outcomes from the ICES workshops “Conflicts and Coexistence in Maritime Spatial Planning (MSP)” (WKCCMSP 2016) and “Coexistence and synergies in MSP” (WKCSMSP 2018)

2019/PUB/HAPISG01 The report covering the output and documenting the outcomes from the ICES workshops “Conflicts and Coexistence in Maritime Spatial Planning (MSP)” (WKCCMSP 2016) and “Coexistence and synergies in MSP” (WKCSMSP 2018), edited by the Chairs (Kira Gee, Germany, Andreas Kannen, Germany, Andronikos Kafas, Scotland, and Eirik Mikkelsen, Norway), as reviewed and approved by the Chair of the SSGEPI, will be published as an ICES Cooperative Research Report. The estimated number of pages is 80. WKCCMSP in cooperation with WGMPCZM agrees to submit the final draft of the proposed publication in early 2020.

This is an update on Category 1 resolution 2015/1/SSGEPI02, which was cancelled for exceeding the 2 year deadline for submission. This was due to the timing of the second workshop in 2018, and the decision taken by the Chairs to combine the results from the two workshops into a single CRR. The present submission differs slightly from the original in that WKCSMSP is now also added.

Note form ICES Editor: The Series Editor has reviewed the new resolution, and had no amendments or issues to raise. He noted that this group has produced well written reports in the past.

Supporting information

Priority:	The ability to deal with conflicts constructively and effectively is a key requirement for successful MSP. Thinking about conflicts in MSP is often reduced to spatial conflicts, but conflicts are multi-dimensional and very often process-related. Unrecognised conflicts can lead to blockages in the MSP process, resulting in extra work down the line or hampering the ability to foster coexistence. Recognising different types of conflicts and finding solutions that promote coexistence between marine uses and interests is therefore an essential part of quality assurance in MSP.
Scientific justification:	As set out in the ToRs for WKCCMSP, the forthcoming ICES Cooperative Research Report will present a typology of conflicts in MSP, setting out an analytical framework for identifying, assessing and addressing conflicts at different stages of the MSP process. The analytical framework will be illustrated by case studies from across Europe. The content of the CRR will be directly linked to WKQAMSP (2012) and CRR 327 (from 2015) on a quality management system for MSP.
Linkages to advisory committees:	This product is relevant for SCICOM with regards to MSP and work supporting the implementation of the Marine Strategy Framework Directive (MSFD)
Linkages to other committees or groups:	Links to the ICES Strategic Initiative on Human Dimensions in Integrated Ecosystem Assessment (SIHD) and WGMPCZM
Linkages to other organizations:	National and international bodies including OSPAR and HELCOM dealing with marine planning will welcome the publication
Draft outline of publication:	See next page
Resource requirements:	The material in the report is largely available in preliminary form material prepared by the workshop and its participants; therefore no specific additional costs will be incurred.
Participants:	Approximately two month’s work is required by the editors to finalise this draft
Secretariat facilities:	About one month of the services of Secretariat Professional and General Staff will be required.
Financial:	Cost of production and publication of an 80-page CRR

Promotion:	The CCR will be promoted at forthcoming ICES ASCs, other MSP-related conferences and through fora such as the EU MSP platform.
------------	--

Draft Contents

Foreword	3
1 Introduction	1
2 Definitions	3
2.1 Conflicts, coexistence, synergies and why they matter in marine spatial planning	3
2.2 Types of synergy and coexistence	4
2.3 Drivers of coexistence and synergy	4
2.4 Barriers to achieving coexistence and synergy	5
2.5 Common characteristics of conflicts	5
2.6 A typology of conflicts and synergies	6
3 Conflicts: Understanding their nature and origins	7
3.1 Predispositions and triggers of conflict.....	7
3.2 Dimensions of conflicts.....	9
4 Assessing conflicts and the risks they pose to MSP	11
5 Synergy in MSP	13
6 Addressing MSP-based conflicts and promoting synergy	13
5.1 Goal-setting in MSP to pre-empt and mitigate conflicts.....	13
5.2 Fostering positive forms of co-existence	13
5.3 Managing the planning process	14
7 Tools and methods for addressing conflicts in MSP	22
8 Overall conclusions	23
9 References	33
10 Author and contributors information	36

Status Report on Harmful Algal Events

2019/PUB/EPDSG05 A **Status Report on Harmful Algal Events** in the ICES area will be prepared by members of the ICES-Intergovernmental Oceanographic Commission of UNESCO (IOC) Working Group on Harmful Algal Bloom Dynamics (ICES-IOC WGH-ABD) using data in the IOC-ICES-North Pacific Marine Science Organization (PICES) Harmful Algal Event Database (HAEDAT) as well as national reports presented at ICES-IOC WGHABD since the late 1980s. Much of this data remains in the grey literature and unavailable to scientists, managers of regulatory monitoring programmes and policy makers. The CRR will use these data to describe the harmful algal events that occur in the ICES area as well as any spatial and temporal changes that have been observed. Currently, the IOC are producing the first Global Harmful Algal Bloom (HAB)

Status Report (GHSR), which will constitute the first assessment of the status of HABs across the world. The CRR will represent the ICES contribution to the GHSR and will also form a baseline resource to feed into the UN Decade of Ocean Science for Sustainable Development.

The editors (Eileen Bresnan, UK, and Henrik Enevoldsen, Denmark) agree to submit the final draft of the proposed publication by 31 Oct 2020 (official ICES deadline: July 2022).

This is an update on Category 1 resolution 2016/1/SSGEPD04, which was cancelled for exceeding the two-year deadline for submission. The delay was caused by a much more extensive QC than expected for the IOC-ICES-PICES HAEDAT database that is being used as a main dataset for the report. Older records needed to be amended to ensure continuity with more recent entries, and this took a much longer time than originally envisaged.

An advanced draft of this report exists and can be provided upon request. Data products generated from this report are being included in publications associated with the GHSR that is currently being generated.

Note from ICES Editor: This resolution has been positively evaluated by the series editor (Emory Anderson), the Steering Group Chair (Silvana Birchenough), The Science Impact and Publications Group Chair (Nils Olav Handegard) and the SCICOM Chair (Simon Jennings and Jörn Schmidt).

Supporting information

Priority:	The proposed Cooperative Research Report presents a synthesis of harmful algal events in the ICES area. It will provide a concise review and synthesis of data in the IOC-ICES-PICES HAE-DAT database as well as from national reports presented at WGHABD. This will include a regional information about the type of harmful algal event, responsible species, management actions and any temporal or spatial changes in the distribution or severity of these events. This CRR will comprise approx. 100 pages and will represent the ICES contribution to the IOC Global Harmful Algal Bloom Status Report (GHSR). It will also present baseline information that will support interpretation of 'Good Environmental Status' for the Marine Strategy Framework Directive (MSFD) and feed into the OSPAR Quality Status Report 2020 as well as the UN Decade of Ocean Science for Sustainable Development.
Scientific justification:	<ul style="list-style-type: none"> • Harmful algal blooms are regularly recorded in the ICES area where they can negatively impact the marine ecosystem and the goods and services it produces. • Spatial and temporal differences in the nature and severity of these harmful algal events are also observed. • This report will provide a first concise review and synthesis of harmful algal event data in the ICES area. Spatial and temporal changes in harmful algal events will be investigated. • Harmful algal blooms are a global problem. This report will represent the ICES contribution to the IOC Global Harmful Algal Bloom Status Report (GHSR). • This report will also provide useful management information for expanding aquaculture interests in the ICES area.

Linkages to advisory committees:	This report will feed into SCICOM and will represent the ICES contribution to the IOC-Intergovernmental Panel on Harmful Algal Blooms (IP-HAB) Global Harmful Algal Bloom Status Report (GHSR).
Linkages to other committees or groups:	It is expected that the CRR will be of interest to a range of end-users both within ICES and outside (e.g. PICES and IOC other regional/global groups involved with harmful algae), reflecting the interest in influence of a changing marine environment on harmful algal blooms and associated impacts on aquaculture services, requirement of information about baseline conditions for the assessment of GES for the MSFD, OSPAR assessments and the associated impact on the aquaculture industry within the ICES area.
Linkages to other organizations:	This report will feed into the Global Harmful Algal Bloom Status Report (GHSR) that is currently being produced.
Draft outline of publication:	The table of contents will consist of : <ol style="list-style-type: none"> 1. Executive summary 2. Introduction 3. Background to Harmful Algal Events in the ICES area 4. Methodology (including metadata for ICES-IOC-PICES HAEDAT database) 5. Description of ICES Ecoregions 6. Harmful Algal Events <ol style="list-style-type: none"> 6.1 Amnesic Shellfish Toxins 6.2 Azaspiracids 6.3 Diarrhetic Shellfish Toxins 6.4 Cyanobacterial Toxin Events 6.5 Ciguatera Fish Toxins 6.7 Paralytic Shellfish Toxins 6.8 Fish Killing Algae 6.9 Aerosolised Toxins 6.10 Others 7. Synthesis 8. Appendices
Resource requirements:	Colour illustrations of the species, coloured maps and bar charts will be included
Participants:	Editors aim to complete revisions following referee comments and final compilation of the bibliography during the remainder of 2020.
Secretariat facilities:	Editorial services
Financial:	None
Promotion:	Publication will be promoted by IOC HAB centre and those involved with the IOC GHSR. It will be promoted at IOC Intergovernmental Panel for HABs and International Conference for Harmful Algae to be held in 2021.

Marine Aggregate Extraction and the Marine Strategy Framework Directive: A review of existing research

2019/PUB/HAPISG06 This bibliographic review was initiated by the ICES Working Group on the Effects of Extraction of Marine Sediments on the Marine Ecosystem (WGEXT). Its purpose is to consider impacts of marine aggregate extraction (m.a.e.) in the context of the MSFD, and the overarching objective to achieve Good Environmental Status (GES) across a number of relevant descriptors. The review identifies gaps in current knowledge and highlights the need for ‘expert judgement’ where understanding is limited. In particular, we highlight the need to account for seabed recovery and recolonisation when seeking to understand the footprint of effects from aggregate dredging. Information from this study will inform future management of this activity and its sustainable development, thus addressing policy and management needs. The report will be 56 pages in length.

The editors agree to submit the final draft of the proposed publication by September 2020 (official deadline: September 2022).

Supporting information

Priority:	<p>Marine aggregate dredging is an important industry globally, providing sand and gravel for construction, fill and coastal defence. In Europe, many countries with maritime borders are engaged in aggregate dredging, and quantities extracted now amount to tens of millions of tonnes each year.</p> <p>As a source of pressure on the marine environment, it’s vital that the effects of this activity are understood, not least in the context of developing approaches for assessment of Good Environmental Status (GES) under Marine Strategy Framework Directive. Despite a significant body of research concerning marine aggregate dredging, misconceptions persist concerning the nature of effects (e.g. spatial extent, potential for recovery).</p> <p>With expertise in this area, the ICES Working Group on the Effects of Extraction of Marine Sediments (WGEXT) has an important role to play. We hope the review will assist colleagues engaged in MSFD assessment.</p>
Scientific justification:	<p>Despite a significant body of research concerning marine aggregate dredging, misconceptions persist concerning the nature of effects (e.g. spatial extent, potential for recovery).</p> <p>With expertise in this area, the ICES Working Group on the Effects of Extraction of Marine Sediments (WGEXT) has an important role to play. We hope the review will assist colleagues engaged in MSFD assessment.</p> <p>The work relates to a WGEXT ToR to publish outputs from the group, thereby improving understanding of the impact of extraction activity on coastal and marine ecosystems and informing the management of the activity and its sustainable development.</p>
Linkages to advisory committees:	<p>This report is authored by members (Michel Desprez, Keith Cooper, Ad Stolk) of the ICES Working Group on the Effects of Extraction of Marine Sediments on the Marine Ecosystem (WGEXT).</p>
Linkages to other committees or groups:	<p>It is expected that the CRR will be of interest to a range of end-users both within ICES and outside, reflecting the increasing interest in MSFD issues.</p>
Linkages to other organizations:	<p>NA</p>

Draft outline of publication:	The report is completed and ready for submission. It can be reviewed upon request.
Resource requirements:	ICES Editorial services
Participants:	Authors aim to complete revisions following referee during the remainder of 2020.
Secretariat facilities:	About one month of the services of Secretariat Professional and General Staff will be required
Financial:	Associated publication costs.
Promotion:	ICES ASC 2021

2 Resolutions for TIMES publications

Report on measuring nuclear abnormalities in mussel haemocytes and fish erythrocytes

2019/PUB/HAPISG02 A report on **measuring nuclear abnormalities in mussel haemocytes and fish erythrocytes**, edited by members of WGBEC and other colleagues in the field, including a clear description of the best practices for the collection and preparation of mussel haemocytes and fish erythrocytes for scoring nuclear abnormalities, will be prepared. This report will be published in the ICES Techniques in Marine Environmental Sciences (TIMES) series and will amount to approximately 50 pages. The editors agree to submit the final draft of the proposed publication by 31 December 2020.

Note from ICES Editor: This resolution has been read and approved by the TIMES Series Editor.

Supporting information

Priority:	The proposed TIMES manuscript will include the most current scientific practice for the collection, preparation and scoring of nuclear abnormalities in both mussel haemocytes and fish erythrocytes. The manuscript will include the different staining protocols and guidance on identifying viable cells for the assessment of nuclear abnormalities. Automated tools will be evaluated and suggested for inclusion with the ultimate aim to increase the number of cells assessed over a shorter time and to eliminate assessment bias.
Scientific justification:	<ul style="list-style-type: none">• Nuclear abnormalities including micronuclei formation, nuclear buds and bi-nucleated cells are an important biomarker in biological effects monitoring and are one of the core biomarkers in the working group on biological effects of contaminants (WGBEC) integrated monitoring strategy. However, despite their importance, there is currently no TIMES manuscript available on this method.• The TIMES manuscript will consolidate existing methods in the scientific literature and provide the best scientific practice for the assessment of nuclear abnormalities in mussels and fish.• A BEQUALM inter-calibration for these nuclear abnormalities in mussel haemocytes occurred in 2018-2019, which identified differences between assessments and indicated the importance of having a standardised protocol.• Completion of this report was a Term of Reference for WGBEC during several years (2019-2020).
Linkages to advisory committees:	This report arises from the science side (through WGBEC).
Linkages to other committees or groups:	An intercalibration exercise under the Biological Effects Quality Assurance in Monitoring Programmes (BEQUALM) occurred for these nuclear abnormalities in 2018 to 2019.
Linkages to other organizations:	In addition to their links with WGBEC, the nuclear abnormalities were adopted by the Mediterranean Action Plan of the Barcelona Convention for the integrated assessment of pollution. This biomarker is also at a sufficient development level to be used by EU Member states for the assessment of MSFD's descriptor 8.
Draft outline of publication	A preliminary outline is provided but this will be significantly developed over time. <ul style="list-style-type: none">• Introduction• Experimental design• Procedure for collection, preparation and staining of mussel haemocytes and fish erythrocytes• Scoring of micronuclei and other nuclear abnormalities.• Statistical analysis• Data interpretation and assessment criteria• Confounding factors

Resource require-ments:	Colour illustrations of the nuclear abnormalities and other important cellular structures will be included.
Participants:	Editors aim to complete revisions following referee comments and final compilation of the bibliography during the remainder of 2020.
Secretariat facilities:	About one month of the services of Secretariat Professional and General Staff will be required
Financial:	Associated publication costs.
Promotion	The TIMES manuscript will be cited in all relevant publications by ICES expert groups members.

Protocol for the verification of ballast water compliance monitoring devices

2019/PUB/HAPISG03 A protocol for the verification of ballast water compliance monitoring devices is being developed for TIMES by a subgroup of the ICES/IOC/IMO Working Group on Ballast and other Ship Vectors (WGBOSV).

Increasingly, concerns regarding impacts of biological invasions due to the transport of ships' ballast water are resulting in regulatory requirements being implemented around the world (IMO Ballast Water Management Convention [BWMC] 2004; US Coast Guard [USCG] 2012, California State Lands Commission [CSLC] 2018) Consequently, effective and reliable monitoring for compliance with ship ballast water discharge standards is now critical to achieve the regulatory goal of minimizing the risk of invasive species introductions. A variety of ballast water compliance monitoring devices (i.e., various sensors, instruments, kits, methods and assays designed to measure ballast water discharge standards and requirements) have been developed, and several novel approaches are currently being explored. However, for these devices to be adopted and implemented globally – for example, by multiple Administrations (i.e., countries, governments or jurisdictions) for compliance monitoring (as part of formal regulatory enforcement actions) – rigorous, transparent and standardized verification testing is needed to quantify the performance and data quality/uncertainties of the devices. This protocol was developed by a subgroup of the ICES/IOC/IMO Working Group on Ballast and other Ship Vectors (WGBOSV) to serve as a standardized framework for the verification testing of ballast water discharge compliance monitoring devices.

The protocol focuses on quantifying the performance and efficacy of a given make and model of a compliance monitoring device, based on measures of at minimum accuracy, precision, detection limits and reliability, under varying conditions in laboratory and field (that represent the device's intended use) tests. The protocol also provides guidance on appropriate performance reference standards, experimental design, QA/QC and data reporting. This report will be edited by Lisa Drake (SGS, USA) and Mario Tamburri (University of Maryland, USA), and will be published in the ICES Techniques in Marine Environmental Sciences (TIMES) series. The estimated number of pages is 11.

The editors anticipate submitting the final draft of the proposed publication by May 2020 (the official deadline will be May 2022).

Note from ICES Editor: This resolution has been reviewed by the TIMES Series Editor (Tatiana Tsagarakis), the Science Impact and Publications Group Chair (Nils Olav

Handegard) and the SCICOM Chair (Simon Jennings). They consider this report is of great interest, relevant to ICES, and appropriate to TIMES.

Supporting information

Priority:	This protocol is intended to provide a rigorous and globally consistent approach for the testing and validation of ballast water compliance monitoring devices as fundamental tools needed for the successful implementation of the IMO Ballast Water Management Convention, designed to minimize the risk of invasive species introductions.
Scientific justification:	<ul style="list-style-type: none"> • Currently no broadly accepted scientific process exists for the validation this unique but important application of diverse technologies/methodologies for ballast water compliance monitoring. This gap dramatically limits the ability to enforce this critical international environmental convention. • This protocol is based in part on related publications discussing the successful and accepted validations of realted technology and methodology (e.g., Waldmann et al., 2010; First et al., 2018).
Linkages to advisory committees:	This protocol is a direct product of the ICES/IOC/IMO WGBOSV Term of Reference B (2019-2021) "Evaluate test conditions, methods for collection of ballast water, or analysis of samples to inform national and/or international procedures for type approval and compliance testing of ballast water management systems".
Linkages to other committees or groups:	The research conducted by members of the Working Group on Introductions and Transfers of Marine Organisms (WGITMO) has, over time, increased scientific knowledge regarding the BWMC.
Linkages to other organizations:	This protocol has been submitted to the IMO 7 th meeting of the Pollution Prevention and Response Sub-Committee (PPR 7) as an ICES contribution for review and consideration. Following discussions at PPR 7, it now serves as the basis for continued discussions by IMO members, as well as the framework for a parallel effort by the International Organization for Standardization (ISO) Technical Committee 8 (Ships and Marine Technology), Working Group 12 (Aquatic Invasive Species).
Draft outline of publication:	An advanced draft of the report exists, which can be reviewed upon request.
Resource requirements:	No special resources needed.
Participants:	Authors will complete revisions following referee comments.
Secretariat facilities:	Editorial office services.
Financial:	Associated publication costs.
Promotion:	Distribution to WGBOSV members for further dissemination, appropriate list servers (e.g., http://www.psmfc.org), etc.

ICES survey protocols – objectives, design and methodology for acoustic surveys in ices areas 6, 7, 8 and 9

2019/PUB/EOSG04 A survey protocol on acoustic survey sin ICES Areas 6, 7, 8 and 9, will be prepared for TIMES by the Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES areas 7, 8 and 9 (WGACEGG). The document describes the survey objectives and design, and defines the methodology to standardise survey implementation and ensure appropriate use of the data in ICES advisory and science processes. This survey protocol will comprise approximately 80 pages. It constitutes a new ICES Survey Protocol, and has not been formerly published in the Series of ICES Survey Protocols (SISPs). This survey protocol is important information for the scientific community and is relevant to the ICES quality assurance framework.

This survey protocol will be updated at fixed time intervals. WGACEGG commits to submitting the first update of the survey protocol for publication in November 2022, and thereafter every 3 years (November 2025, November 2028,...). If at the end of any given 3 year term no update is required, WGACEGG will duly notify the ICES Editorial office. ICES Editorial office will also be notified if the regular update of the survey protocol is discontinued.

The first edition of the Survey Protocol will be edited by Mathieu Doray, and Jeroen van der Kooij will act as corresponding author. The authors anticipate handing in the report by June 2020 (official deadline May 2022).

Note from ICES Editor: This resolution has been positively evaluated and is supported by EOSG Chair (Sven Kupschus), SIPG Chair (Nils Olav Handegard), SCICOM Chair (Simon Jennings) and TIMES Series Editor (Tatiana Tsagaraki).

Supporting information

Priority:	With the ICES development of a quality assurance framework, this publication is of high priority to satisfy the accreditation criteria. From a scientific perspective, this is also valuable information that will allow a wider and more appropriate use of the existing data as well as provide opportunities to integrate further monitoring, especially for the implementation of the ecosystem approach with these existing monitoring platforms.
Scientific justification:	Scientific surveys are very useful and costly parts of the science and advisory processes. To ensure that surveys are conducted appropriately and to facilitate the use of surveys for novel or improved products it is important that the methodological and design documentation is publicly available along with the data resources that ICES holds. In addition, such documentation is important documentation for implementation of a quality assurance framework.
Linkages to advisory committees:	The information links directly to survey data availability and use in multiple stock assessments under the Working Group on Southern Horse Mackerel, Anchovy and Sardine (WGHANSA), Working Group on Widely Distributed Stocks (WGWIDE) and Herring Assessment Working Group (HAWG)
Linkages to other committees or groups:	Planning Group on Data Needs for Assessment and Advice (PGDATA), WGHANSA, WGWIDE, HAWG, Ecosystems Overview Steering Group (EOSG), and acoustic/trawl and egg and larval data bases.
Linkages to other organizations:	Users of ICES data resources
Draft outline of publication:	A complete first draft of the survey protocol already exists and can be reviewed upon request.
Resource requirements:	Editorial support from ICES Secretariat
Participants:	This report is being prepared by WGACEGG.
Secretariat facilities:	Editorial support from ICES Secretariat
Financial:	Associated publication costs.
Promotion:	The SISP manual will be promoted through ICES social media, and group meetings of the Working Group on Fisheries Acoustics, Science and Technology (WGFAST), Working Group of International Pelagic Surveys (WGIPS) and PGDATA.