

# MINUTES FROM THE 2020 ANNUAL MEETING OF THE INTERNATIONAL COUNCIL FOR THE EXPLORATION OF THE SEA

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ICES BUSINESS REPORTS



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# ICES Business Reports

Volume 1: Issue 10

## Minutes from the 2020 annual meeting of the International Council for the Exploration of the Sea

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## i Executive summary

The annual meeting between the International Council for the Exploration of the Sea (ICES) took place online in October 2020. Fritz Köster, the ICES President, chaired the meeting. All member countries were represented except Russia who sent regrets. This was the first time that the Council took place through remote means.

The meeting covered a review of the Council Strategic Initiative on Resources to support member countries contributions to ICES advice and science, as well as education and training, COVID-19 Pandemic ICES response, ICES in a net-zero CO<sub>2</sub> emission world, reports from the Finance, Advisory and Science Committees, Data and Information, projects, strategic issues, and secretariat report. Elections were also conducted for three new Vice-Presidents to ICES Bureau.

## ii Meeting information

<b>Committee name</b>	International Council for the Exploration of the Sea
<b>President</b>	Fritz Köster, Denmark
<b>Meeting venue(s) and dates</b>	21-22 October, 2020, Online meeting (41 participants)

# 1 Welcome and Agenda

Fritz Köster, ICES President, welcomed meeting participants to the first online Council meeting, noting the unusual circumstances and limited agenda, given that a physical meeting was not possible due to travel restrictions and disruptions caused by the ongoing COVID-19 pandemic. New Council delegates, Geir Huse (Norway), and first-time meeting participants, including the new Chair of the Science Committee, Jörn Schmidt, and the new Head of Finance, Søren Toft were welcomed to the meeting. All member countries were represented except Russia who sent regrets, a list of participants is included to section 15 of this report.

## 1.1 President's review and agenda

The President reviewed the follow-up, in relation to actions decided at the 2019 Council meeting as outlined in the President's review **CM 2020 Del-Doc 1.1.**, noting that for issues where the on-line format of the 2020 Council meeting would not allow for the normal considerations and discussion, more information had been provided. Meeting participants noted that all items decided at the 2019 meeting have been followed up or are scheduled to be addressed on the meeting agenda.

Following the addition to the agenda of a closed session for Council members to discuss the extension of the contract of the General Secretary, meeting participants adopted the agenda.

# 2 ICES in a changing landscape

## 2.1 Council Strategic Initiative on Resources to support member countries contributions to ICES advice and science, as well as education and training

William (Bill) Karp, ICES 1<sup>st</sup> Vice-President reviewed the ongoing work within CSI:Resources noting the three interrelated strands of work that have been developing around the themes of mapping the science and advice priorities; resourcing the advisory process; and capacity building through education initiative.

An important next step is the Workshop on Graduate/Post Graduate Education Strategy to Meet Future ICES Advisory Needs (WKEDU; **CM 2020 Del-Doc 2.1**). This work recognises the importance of coordination among North American and European Universities to develop trans-disciplinary, multi-institutional coursework, research opportunities and scientific personnel exchanges that will build capacity for meeting future science-based advisory needs. The WKEDU will take place online 30 November – 2 December, and will bring together academic leaders from across ICES member countries to draft a plan for addressing this challenge. This will be the first step in a 3-year process to design and implement a curriculum.

Funding has been provided for follow up activities from the US and from ICES Equity.

During the discussion the following points were noted:

Ireland noted it will be important to recognize the heterogeneity of institutes in planning for the capacity building initiative. There are different relationships in different countries between academic and research institutes, for instance the Irish Marine Institute is not academic. It is important to understand this landscape. In the EU there are reliable funding mechanisms that should be considered for potential leverage in support of this initiative e.g. Marie Skłodowska-Curie Actions Research Fellowship Programme.

The Head of Science Support noted a EU initiative happening under the Horizon 2020 financed Mission Atlantic project, with ICES as a partner. Mission Atlantic is focused on developing Integrated Ecosystems Assessments in the North and South Atlantic, including provision of training at Master and PhD level, as well as short training courses that ICES will be responsible for. Efforts will be made to identify any potential synergies among these initiatives.

The Chair of SCICOM noted that ERASMUS+ is also an EU funding programme that may be leveraged in support of capacity building for ICES advisory needs.

**Action:** Council supported and approved the ToRs for the Workshop on Graduate/Post Graduate Education Strategy to Meet future ICES Advisory needs

1. Summarize expertise required to meet current advisory needs and identify likely future expertise requirements for providing advice that supports ecosystem-based decision-making for the management of human activities in marine ecosystems.
2. Evaluate opportunities and impediments related to building interdisciplinary, multi-institutional, international graduate/post graduate programs (while the primary focus is to address future ICES advisory needs, broader capacity building needs should also be taken into account)
3. Review/summarize current single- and multi-institutional programs that support needs identified above and identify successful models
4. Identify issues that must be resolved to allow this initiative to move forward, describe next steps and draft a roadmap for developing a curriculum within 3 years
5. Describe/propose a process for accomplishing these TORs, including possible formation of an expert group and further workshops
6. Evaluate and incorporate approaches for improving (post) graduate education opportunities for women, underrepresented minorities, and indigenous people through this initiative

## 2.2 COVID-19 Pandemic ICES response

Anne Christine Brusendorff, General Secretary presented the meeting *document ICES COVID-19 Response – future preparations and planning (CM 2020 Del-Doc 2.2.2)* prepared by the Coordination Group. The document outlines the experience gained by ACOM, SCICOM, and the Secretariat during the COVID-19 pandemic, from operating through remote meetings the past eight (8) months. The document lists the needs identified if remote meetings are to continue until at least 31 January 2021, including IT equipment, training, and additional human resources. Issues such as language, gender, and culture are among factors influencing the effectiveness of remote meetings, and which are difficult to measure. These factors are important to consider in international science cooperation, and to explore tools available to help facilitate and improve communication and broad participation.

In advance of the Council meeting, delegates were requested to provide written input on a variety of agenda items, including national perspectives on how COVID-19 is im-

pacting staff and productivity. The General Secretary presented a summary of the member country responses that were provided as part of the advance preparation for the council meeting. Member countries reported many similar experiences to adjustment. The responses were summarised:

*How are employees adjusting to remote working, what is going well and what changes would employees suggest?*

Prior to the COVID-19 pandemic many scientific employees were already used to working from home, so has generally worked out well. While for others groups of employees this was not possible or more challenging, i.e. technical employees working in field/lab/experimental activities.

*How is remote working impacting employee productivity?*

Generally productivity of scientific employees has not been largely impacted, however impacts vary depending on science discipline, demographics, social network, career stage, with more impact on productivity for younger and medium level scientists, scientists coming from abroad, and scientists with young families and caring responsibilities. Keeping the information flow was found to be an issue, which deserves attention. Lab/exp./field work productivity has been impacted negatively, to a different degree in different countries.

Paul Connolly, Irish Delegate presented an Irish discussion document (**CM 2020 Del-Doc 2.2.1**) detailing some of Ireland's experiences in working through the COVID-19 pandemic during 2020 and particularly with the ICES marine science community. Similar to all ICES Member Countries, Ireland has been dealing with the move to remote working, the impacts on data collection, the ban on international travel and meetings, the challenge of ensuring delivery of research project commitments, scientific services to national governments, the EU and other national and international partners. The COVID-19 pandemic has catalysed a deep discussion in society on the future of work and has focused attention on the quality of life, wellbeing, working from home, the benefits of remote meetings, reducing travel, reducing climate impacts of travel, and the enormous cost savings that have been made in travel budgets.

There are both short and long-term questions to consider to help cope with this transition, for both organizational, institutional, and importantly staff well-being. The COVID-19 pandemic has caused changes in ICES work, surveys, and science. However, these changes should also be considered as an opportunity for ICES. ICES has done well in the short-term, however, further discussion about how to respond over the longer term, and what further changes and guidelines are needed must also be considered.

During the discussion the following points were noted:

ACOM Chair noted the existing ICES mechanisms are working well together and through the Coordination Group facilitating internal coordination. The shift to remote work has resulted in much more effort by secretariat staff. The Advice support has noted a 50% increase in extra staffing costs.

Germany noted that experts participating in more business focused meetings have become very efficient, welcome the initiatives around hybrid meetings. It has been possible for member countries to facilitate an increase in participation with the travel costs

removed, with more people attracted to some technical meetings. Some problems arise with resolving controversial issues remotely.

France suggested to tackle controversial issues, soliciting "professional" support to address such issues can be a solution: innovative solutions exist.

Canada appreciates that the organizations have been able to work, and recognizes the efforts to shift to online meetings. Also noted some of the negative aspects e.g. concentrated decision-making, and limitations on diversity and inclusion. Looking after the psychological health of participants is critical. This cannot be addressed only by training, further actions are needed to address these issues. In Canada scientific surveys were adapted. A more central concern is the long-term morale and mental health of staff. Productivity is considered a secondary consideration to staff well-being.

Sweden observed further consideration of how to use hybrid meetings effectively will be helpful for future.

Spain noted remote meetings require a greater effort in advance of the meetings to prepare. This advance preparation requires a specific skillset for good meeting organization.

Norway found similarities to their experience in the summary presented, shifting difficult issues to the future as well. Changes in survey sampling will need to be addressed in the coming years. A positive development has been the reduction in travel. The Advice Drafting Groups seemed to work well remotely. There have also been some negative impacts, foreign post-doctoral researchers seemed to be disproportionately impacted, being far from home and in need of social interaction.

Poland reported similar experiences, with some work possible from home. Working remotely has made things more complicated, and in some instances achieving consensus is both time consuming and difficult, with some specific administrative arrangements still not transferred to digital means (e.g. signing of documents) requiring some trips to the office and additional coordination.

**RECOMMENDATION 1 (extract from CM 2020 Del-Doc 2.2.1)**

ICES needs to prepare for a new working norm and consider a post COVID-19 situation in which many scientists from Member Countries may have a very different work pattern (e.g. working from home; remote meetings). This will raise a series of issues for the current way of doing business and may impact the current science and advisory process.

Preparing for the new working norm should include a focus on training for participants (particularly the chairs) in "remote working methods and approaches" that address the nature and objectives of the different types of ICES meetings.

**Action:** Council supported the establishment of a Bureau led Council sub-group to look into how changes caused by societal response to the COVID-19 pandemic will affect ICES work in the short and long-term.

The sub-group will include representation from ACOM/SCICOM/Data&Information and Secretariat to elaborate a draft report with specific recommendations. Council members Matt Gubbins (UK), Paul Connolly (IE), Piotr Margonski (PL), Chris Zimmerman (DE), Florence Cayocca (FR) also volunteered to participate in the work of the sub-group.

## 2.3 ICES in a net-zero CO2 emission world

Bill Karp, ICES 1<sup>st</sup> Vice-president presented the rationale and background for the initiative ICES in a net-zero emission world. ICES needs to adapt its business model in a changing world. The organizational carbon footprint is small, but highly dependent on travel. The intent is to maintain and enhance functionality, creativity, and responsiveness while reducing carbon emissions to the extent possible. Action is necessary to demonstrate leadership and commitment to addressing climate change. The required changes in business model are also related to pandemic response and expected national budget constraints. The initiative recognizes ICES/SCICOM role in addressing scientific questions related to reduction of emissions, carbon sequestration, offsets, etc.

The policy proposal was developed by Bureau during 2020, and aims at reducing emissions related to “ICES Activities”. This work will build on lessons learned during the COVID-19 pandemic and related institutional changes. It is expected that reducing travel will also be necessary for fiscal/budgetary reasons. Suggestions have ranged from “all remote” meetings to a more measured strategy.

### **Suggested draft ICES policy/position**

ICES acknowledges and supports actions taken by member countries to substantively reduce emissions and will take actions necessary to move towards net-zero status for operations and activities managed directly by the Secretariat and carried out during meetings of ICES Expert Groups as soon as possible. These actions will be taken in full consultation with member countries and in recognition of their specific positions. ICES will also encourage and support activities within our network which develop and integrate the science necessary to provide advice on reducing emissions associated with fishing and fish processing operations, aquaculture, research, monitoring, and ecosystem-based fisheries management, and integration of mitigation technologies, such as marine renewables, with other uses of marine space and resources. ICES considers this initiative to be of the highest priority and will make every effort to meet this goal, and engage the community in identifying, developing, and implementing the changes required. **This Policy will be reviewed regularly.**<sup>1</sup>

During the discussion the following points were noted:

Canada agrees with the net-zero policy. But questioned the unique position of ICES in giving advice on reducing CO2 emission more broadly.

<sup>1</sup> Bold text was agreed by Bureau to address the points raised during the Council discussion.

Ireland noted the proposal that aims to put ICES in a leadership role, even though the current carbon footprint is estimated to be relatively small. A focus on blue carbon/blue carbon sequestration could be a role for ICES to help member countries.

Sweden expressed support for this initiative, and that it was good to make visible the potential for advice.

UK noted the policy signals a direction for the organization, but is vague, suggested it might be relevant to consider this as an interim statement and clarify some of the language with focus on clarifying the internal and external messages.

The SCICOM Chair was optimistic that SCICOM can work on the proposed ToRs (see action box) There are lots of relevant national activities. There are ICES initiatives already developing around Blue carbon/sequestration, through an ICES-PICES group on ocean negative carbon emissions. New groups like WGSHIP also look at relevant issues within their ToRs.

The ACOM Chair noted that the policy should be agreed by Council, and ACOM will help to implement the decisions of Council.

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**Action:**

Council agreed to establish the Bureau working group on ICES in a net-zero emission world to address TORs 1-4. Membership in this group will be broad to engage expertise from within and outside ICES. The work will be informed by the sub-groupe set-up under 2.2 (Pandemic Lessons Learned).

Council requests SCICOM to report back on TORs 5-7

Council delegates are requested to provide updated information on relevant national policies and needs

The work will also aim to engage with the community (e.g. plans for a webinar)

Bureau will revise the draft policy statement based on the Council discussion. Bureau is mandated to approve and publish the statement.

**Agreed Terms of Reference for Bureau Working Group**

1. Develop a strategy for estimating and publishing the ICES community baseline at an appropriate level of resolution
  - a) Begin with a working definition of the “ICES Community” as “activities that are organized directly by ICES operations and activities managed directly by the Secretariat and carried out during meetings of ICES Expert Groups” and refine this as appropriate
  - b) Consider alternative approaches for defining baseline (e.g. inventory of historic meetings and participation, more comprehensive approaches to quantify CO<sub>2</sub> footprint, etc.)
  - c) Investigate the possibility of using an existing guide/framework such as the one available from the Carbon Trust (depending on outcome of b, above) – (may not be necessary)
2. Inventory, document and evaluate steps already taken to justify travel, facilitate remote meetings, etc. in recent years and, in particular, during the COVID-19 pandemic with careful examination of benefits (such as broader participation) and costs (such as reduced social and informal interaction). Make the greatest possible use of lessons



- learned in developing this strategy (develop best practice guides; collaborate with other organizations, etc.)
3. Survey member countries and other organizations to determine if they have:
    - a) Developed targets and strategies for short- and long-term reduction of their CO<sub>2</sub> footprints or otherwise restricted travel and/or other sources of emissions
    - b) Conducted CO<sub>2</sub> footprint audits or established baselines in other ways
    - c) Inventory details related to a and b above and update regularly
  4. Draft a CO<sub>2</sub> footprint reduction strategy for ICES which achieves net-zero status as soon as possible and:
    - a) Sets short-and long-term targets
    - b) Establishes overall CO<sub>2</sub> budget reduction trajectories for different parts of the organization
    - c) Seeks input from throughout the organization (top-down and bottom-up) and is responsive to relevant activities in Member Countries
    - d) Encourages and resources innovations that reduce ICES related travel, improve remote meeting capabilities, develop and advance remote networking, etc.

#### **Terms of Reference Forwarded to SCICOM by Bureau (June 2020)**

5. Together with other relevant organizations, consider approaches for auditing and reducing emissions associated with:
    - a) research and monitoring, including use of research vessels and alternative platforms
    - b) fishing, aquaculture and fish processing operations
    - c) CO<sub>2</sub> offsets (e.g. mitigation, offshore energy, biomass /biofuel production)
    - d) additional science focus areas?
  6. Emphasize net-zero thinking in everything we do and miss no opportunity to advance on this goal (e.g. upcoming relocation of Secretariat, planning for future ASCs) (Standard TORs for EGs?)
  7. Work with partner organizations such as PICES and OSPAR, to develop joint policies and procedures and take a leadership role in CO<sub>2</sub> reduction strategy development and implementation
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## 3 Finances

### 3.1 Report from Finance Committee

Ari Leskelä, Chair of Finance Committee, presented the report of the Finance Committee (**CM 2020 Del-Doc 3.1**). The report detailed the Final Accounts 2019, status report as of 31 July 2020, Proposed budget 2021 and Forecast budget 2022, Ongoing projects, projects in pipeline and contracts, Capital Reserve Fund and Equity, and the Statement from Bureau on the economy of the organization.

At their May meeting, Finance Committee discussed, approved and signed the Final Accounts, Audit book comments on the Final Accounts and report.

The current financial year (2020), was exceptional with reduced travel expenses. There was also a loss of income from training courses, as well as the postponement of the ASC. All of these events have contributed to a projection for a final positive operating result. Funds from the positive operating result will be transferred to equity.

The Proposed 2021 budget and Forecast 2022 budget require Council approval. The major unknown for coming years is project income. Only revenue for ongoing projects are included in the budgets. In future, expenditures and travel costs are expected to increase and this is reflected in the unchanged travel costs budget. Some delays in project funding may be expected related to delays in European funding.

#### **Bureau statement on the economy of the organization**

Based on the Financial Overview Report for 2020-2022, and taking into account the 2019 audited accounts, Bureau finds that:

Overall, the organization is demonstrating healthy economic development, including:

- Finalization of new agreements with advice requesters for recurrent and special requests; notably Iceland and EC/DG ENVIRONMENT.
- Evidence of a balance between costs and income indicating progress towards 100% cost recovery for recurrent advisory products.

Bureau notes that there are still on-going negotiations for a new MoU between UK and ICES, to enter into force January 2021, and that this will reflect on the negotiations and the costs in the Specific Agreement between EC/DGMARE and ICES. Furthermore, this will have to be reflected in the MoU between NEAFC and ICES, which also needs to be based on the temporary calculations of costs for providing scientific advice, using weighted number of stocks per advice requester.

The budget takes a conservative and risk averse approach, which specifically for the 2022 forecast budget means that (current) project revenue is anticipated to less than DKK 1.5 million, and to increase to approximately DKK 2.5 million, due to projects in the pipeline. With this revenue as well as an expectation for new projects and contracts, it is anticipated, despite the projected deficit, that a more balanced budget will be achieved in 2022.

Bureau specifically notes, that the organization has managed well during the COVID-19 pandemic, and that the surplus in the current budget year 2020 is due to cessation of physical meetings and travels, cancellation of training courses, and postponement of the ASC to 2021.

If online meetings are continued throughout the coming budget years, some of the travel budget lines will be absorbed to cover costs from additional resources needed in the Secretariat to facilitate and support meetings in different time zones, as well as for additional IT infrastructure, and training for the community. It can also be expected that the cost of travel (air tickets) will increase and the limited travels will cost more. Investments from equity could also be foreseen in the coming years.

Bureau recommends that an inflation regulation of 1.7%, of the 2022 national contributions, will be decided by Council.

During the discussion the following points were noted:

Germany suggested in 2021 to aim for a balanced result, as need to by transferring less funds from equity. It was also requested to show the strategic investment (equity) decisions in the Finance report.

The President requested Council feedback on the new format and the conclusion statement by the Bureau, and to reflect on if the report makes things more clear and structured; and if the Bureau statement provides Council reassurance that the organization is healthy.

Ireland supported the new reporting format as clear and well presented, the Bureau statement is helpful, it gives Council a sense of comfort and explicitly confirms that Bureau has considered the report. Suggested that in the case where things are not good economically, the Bureau should explain why, and propose actions for Council to consider and decide.

France supported the new reporting format, as a good improvement. Would appreciate a larger historic view of the trends and expenses.

The President noted the work of the Council working group on the ICES Business Model and the intention to periodically review the historic development.

Norway also embraced the changes to the format of the Finance report, and noted that given uncertainty around projecting budgets a two-year time perspective was adequate.

Poland noted a sharp increase in salaries, it was clarified that this was resulting from the strategic investments, and that it was an oversight that this not mentioned specifically in the report.

Going forward it will also be important to try to get an understanding of the costs versus savings from the effects on work related to the response to COVID-19.

**Action:**

Finance Committee is requested to look back at the financial development over the past five years, or a timescale that is fund appropriate, also considering the project income.

Council approved the final accounts for 2019, as well as the proposed 2021 budget.

Council provided information via an online questionnaire on what further documentation would be needed to support an increase in national contributions for the forecast 2022 budget, as recommended by Bureau and Finance Committee.

The Secretariat and Finance Committee will follow-up on the suggestions provided by Council members and an e-voting/approval process on the 2022 forecast budget will be planned for January 2021.

## 3.2 Strategic Investments

Anne Christine Brusendorff, General Secretary presented a document summarizing the status of the Council agreed investments in support of ICES strategic Plan, Science Plan, and Advisory Plan, as described in **CM 2020 Del-Doc 3.2**.

Investments are for time limited additional human resources (contract periods between 2 and 4 years), support for events, training, as well as scoping needs for improved remote meeting facilities.

### Agreed investments in support of ICES Strategic Plan, Science Plan, and Advisory Plan



Investment	Status	Development
<b>Developer</b> Computer scientist with proven experience in software development lifecycle	Data programmer, started 06.07 2020	<b>Fisheries independent data flows:</b> Acoustic data portal, Trawl Survey (DATRAS)
<b>Developer</b> Computer scientist with proven experience in software development life cycle	Continuation of contract, Application Programmer/Developer	<b>Fisheries dependent data flows:</b> Regional Database and Estimation System (RDBES)
<b>Technical Project Manager</b> Technical science background with proven project management experience	Position not yet advertised	<b>Dissemination of Advice</b> Automation and visualization of rendering of (stock based) Advice
<b>Technical Science</b> Stock assessment expertise with strong coding, automation, and technical knowledge	Professional Officer positioned filled as of started 01.01 2020	<b>QA and QC of Assessment</b> Transparent Assessment Framework (TAF)
<b>Additional resources in Finance Department</b>	Head of Finance started 01.10.2020	<b>Strengthen Secretariat Finance Department</b>
<b>ACOM assessment workload</b>	Contracts finalized during 2020	<b>QA and QC of Assessment</b> Transparent Assessment Framework (TAF)

Time-limited contracts, between two and four years

Ref: [Del Doc 9.1 Data and Information Services Report](#)

Investment	Status
<b>ASC in Copenhagen 2021</b>	Planning phase for ASC
<b>4th ICES/PICES Early Career Scientist Congress (co-funding: ECS travel support – competitive awards, invited speakers and representatives)</b>	Will be arranged in 2022
<b>One time support to UN Decade of Ocean Science</b>	Some funds used in 2020, remaining funds to be used in coming year(s)
<b>Bring academic leaders from ICES member countries together to develop multidisciplinary, multi-institutional coursework, research opportunities and scientific personnel exchanges, which will build capacity for meeting future science-based advisory needs. Initial steps will include 1-2 workshops. Deliverable will be a general curriculum with specific course offerings.</b>	Due to COVID-19 first workshop will be arranged on-line
<b>Training for chairing, running, and supporting remote meetings</b>	Planning phase
<b>Report on review of remote meeting facilities at ICES, and recommendations</b>	Planning phase

#### One-off or activity specific investments

It was agreed at the 2019 Council meeting to provide the Secretariat with a mandate to negotiate with recurrent IGO advice requesters for a 45% cost recovery of past and future equity investments, based on a five-year average, and with an option to phase in the cost recovery over time

(equity fee) (Ref **CM 2019 Del-Doc 3.3**). This cost recovery plan, will also inform MoU negotiations. To date, nearly all advice requesters have agreed to the temporary cost-sharing principles, including the equity fee, which still is to be negotiated with NEAFC and DGMARE.

The President cross referenced the list presented by the Secretariat with the 2019 Council report and confirmed the investments are being pursued as agreed.

There are still some unknowns around potential costs related to the move of ICES HQ to a new location in Copenhagen. The remote meeting investment was agreed before the pandemic and is only aimed at scoping. Coordination Group will develop a timeline for additional investments necessary.


**Action:** Council will be kept updated on the need for further investments in support of the move of ICES HQ, remote meeting facilities, as well as training. Coordination group will report back when more information is available.

## 4 Report from the Advisory Committee

Mark Dickey-Collas, Chair of Advisory Committee reported on Advisory progress as outlined in **CM 2020 Del-Doc 4.0**. The ACOM Chair commended and expressed thanks to the ICES community for coming together to provide an extraordinary effort to deliver on the Advisory commitments, despite challenging working conditions. The disruptions caused by the COVID-19 pandemic, has meant a lot of coordination and discussion with requesters, experts, and stakeholders.

There has been positive response from requesters and observers to the release & response to the ICES advisory plan launched December 2019.

A resilient framework of advice for EBM & quality control has been developed for ICES advice as an umbrella for fisheries and ecosystem advice. Advice is now also a data product, not only a narrative/text. Quality assurance of advice and EBM incorporates 10 principles for ICES Advice.



### Principles of ICES advice

<ol style="list-style-type: none"> <li>1. Document openly</li> <li>2. Formulate request iteratively</li> <li>3. Clarify objectives &amp; risks</li> <li>4. Deliver knowledge timely</li> <li>5. Use best available science</li> </ol>	<ol style="list-style-type: none"> <li>6. Apply data FAIR principles</li> <li>7. Undergo peer review</li> <li>8. Create clear &amp; consistent advice</li> <li>9. Agree by consensus</li> <li>10. Ensure impartiality</li> </ol>
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Following the 2019 request from Council, an analysis of the aim and focus of stakeholder engagement in ICES has been developed and a way forward has been suggested, including a proposed workshop to consider elements for a stakeholder engagement strategy for ICES. The aim is to advance knowledge and support policy.

Exciting & new in 2020 is the development of the bycatch roadmap that maps data flows, that will result in operational advice, and will feed into fisheries overviews. Bycatch knowledge is assumed to come from ICES, and more resource requests for experts are expected.

ICES has been world leading the past 10-years developing assessment and advice rules for data limited stocks. Other notable developments include advice on pulse trawl; the release of a View-point on scrubbers (process for cleaning exhaust/toxins). Also developed a new approach and graphics for standard graphs; as well as signing a new MoU with EC DG ENVIRONMENT.

During the discussion the following points were noted:

The President commended the work of the Chair of the Advisory Committee, and the Advisory Committee and Advisory support. It has been impressive to see the capacity to handle the advisory commitments as well as to develop this breadth of work in 2020.

Ireland noted that the achievements of the Advisory Committee in 2020 are primarily due to quick thinking, that reflects well on ICES, and member countries. Happy to see progress on stakeholder engagement. The Terms of Reference for WKSHOES will be approved by ACOM/SCICOM, 3 November. It was clarified that “stealth issue advocacy” is when individuals use their engagement to push interests in a stealthy/intransparent manner, this concept was described in an EU report.

US noted the remarkable success of the leadership and the responsiveness of ACOM and the community, this reflects the strength of the organization.

The ACOM Chair noted there are a number of issues linked to the COVID-19 disruption coming up for next year that will require attention. Observer coverage of fishing activities has been poor, discarding figures for 2020 might be questionable. Similarly ways to address survey gaps are developed. Benchmark work is short of experts, and this will be a big challenge for next year. Special requests were paused at the start of the pandemic, but are now being accepted again.

Sweden commended ACOM, and noted that this work highlights it is possible to draw some positive outcomes from the COVID-19 experience. Continued work on simplification could be a good strategy to help maintain productivity into next year. Coordination of shared stocks with third countries could be a role for ICES. Zonal attachment requires that data is collected in a different manner, it will be unavoidable that this question comes to ICES. The ACOM Chair noted ICES will aim to avoid commenting on zonal attachment in 2021.

Norway noted the good balanced report from ACOM, and appreciated the focus on quality control etc. Both the Data Centre and ACOM have increased focus on data quality, and this is positive and critical for ICES to respond to client needs. It was clarified that the stakeholder engagement workshop (WKSHOES) is about listing the elements of what a strategy should be. The outcome of the workshop will allow the ICES community to explore the issue, considering how to take a strategic view and monitor engagement.

ICES President noted the European Maritime, Fisheries and Aquaculture Fund (EMFAF) opening for integrated of monitoring, i.e. to address the MSFD, and that the details of this funding programme is still unclear, with the expectation being that there will not be more but less money, despite increased complexity. The DCF will not have additional funding to deal with bycatch issues. The EMFAF program and distribution of funds to member states is delayed, and potentially expected first in early in 2021.

France noted the excellent work of the ACOM Chair. The framework for advice that has been developed is appreciated. Noting the process around benchmark review and the ambitions and cost of the quality assurance system, e.g. evident in the investments in the Transparent Assessment Framework (TAF). And given the challenges with lack of experts, France asked whether there is a process in ACOM to limit the human cost/resources to deliver the products in a satisfactory manner? Otherwise there may be continued problems with member countries not populating the groups.

The ACOM Chair noted that ACOM is exploring the reporting of expert groups; there are also efficiencies to be found in increasing quality. ACOM is pragmatically thinking about the limits in the system. ACOM now has a robust system to evaluate special requests, including to assess the expert resources available. However, there are still unforeseen issues that can pop-up e.g. bycatch on cetaceans.

In advance of the Council meeting, and to supplement the work of ACOM and the EU Regional Coordination Groups (RCGs), delegates were requested to provide written input on a variety of agenda items, including national perspectives on COVID-19 disruptions on data collection. The General Secretary presented a summary of the member country responses that were provided as part of the advance preparation for the council meeting. The responses were summarised:

#### **Impact on data collection, assessments & advice**

*Please provide information on survey and sampling reductions during the pandemic which could impact future assessments and indicate whether additional coordination across countries (e.g. exchange of vessels) could improve this situation.*

Most countries who responded stated no or limited impacts on standard surveys; though some cancellation/postponement of research surveys occurred. Some adjustments due to precautionary measures, including limited or no staff exchange on international surveys, reduced intensity/time and station coverage.

Sampling onboard commercial vessels largely stopped and is only partly running again. Some impacts on market sampling. Recreational surveys were hindered by national travel restrictions.

Ireland reported that sampling and survey issues should be reconsidered heading into a new DCMAP under the EMFAF and faced with BREXIT, particularly in a “no deal” situation.

Sweden reports coordination in Baltic but that more efficient coordination could be hampered by different strategies in different countries to fight the pandemic.

Poland was able to cover all the survey cruises, with limited sampling at sea and the use of smaller boats.

Germany was also able to keep up the survey sampling, though it was still a lot of work, and required specific staffing arrangements to account for health and safety standards. Efficiency gains were eaten up by more efforts needed in other areas. If the pandemic continues into next year there could be problems with data collection and online work.

Portugal is implementing a pilot experiment (automatic/remote image acquisition of landings boxes to obtain partial data on landings length composition). Coordination across countries could be useful for remediating impacts of similar situations in the long term, including alternative sampling methods to reduce impacts.

Some Member Country feedback on simplification of advice was also presented.

*Please provide feedback on your national perspective and/or stakeholders views on “simplification/frequency of advice”*

Most countries have not had any problems/feedback with the simplification of the advice, i.e. BE, DK (some specific comments from stakeholders), DE (welcomed from a scientific point of view), IE (COVID-19 provides for a healthy debate on this), UK (uncontentious due to the annual meeting between science and industry to explain the annual advice), US (will likely be a stock-by-stock decision with our management partners),

The President noted that this indicates relatively limited impact on standard stock assessment surveys, though some limitations on observers depending on the country and the fishery. The

Irish and Swedish comments also deal with Brexit. It might be useful for ACOM to review the feedback from countries.

The changed UK participation in EU systems for coordinating monitoring and sampling (such as RCGs) will also impact on ICES. ICES has used the leverage offered by the RCGs to reduce its activity and resources expended by those in the secretariat and committees dealing with coordination of sampling and surveys. Delegates are asked:

- what role should ICES play on the coordination of sampling and surveys now that the UK has been removed from the RCGs?
- are resources available to create an ICES mechanism to maintain a coordinated and integrated approach?
- what next steps should ICES take to ensure the objectives of the ICES strategic plan are achieved in terms of the quality, consistency and innovation of sampling and surveys?

Main ideas from the discussion:

The EU Regional Coordination Groups (RCGs) evaluate the scope of required regional coordination for data collection. Coordination with non-EU member countries is also encouraged, in Article 9<sup>2</sup> of the Data Collection Framework, though in practice has not yet been achieved.

RCGs are critical to European coordination, for both fisheries independent and dependent data collection. The UK aims to make use of this possibility for participation in the RCGs post-Brexit as observer, which is obviously appreciated by the EU.

Norway and Iceland do not see value in cooperating through EU mechanisms such as RCGs, and prefer to coordinate through ICES.

Lotte Worsøe Clausen, Head of Advisory Support noted that ICES participates in the RCGs based on its role as an end-user of the data. The majority of end-user needs are identified in benchmarks. It is critical for ICES to invest in resources to ICES benchmarks. The benchmarks may help to identify where it may be possible to reduce/delete unused data streams. There are groups already working on initiatives within ICES.

ICES President noted that integrated monitoring needs to rely not only on survey data, but also fisheries dependent data. ICES must help define what data is needed for stock assessments, but also what science and technology should be used in data collection, an issue not sufficiently covered by the RCG's. It may be possible to leverage available EU funds for technological advancement in fisheries and aquaculture, by coupling money for science and technology from Horizon Europe to EMFAF funding used for monitoring.

Germany noted that leveraging funds in the manner suggested is complicated at national level.

The ACOM Chair noted that the realignment of ICES Steering groups was aimed at facilitating integrated monitoring. The newly created Data Science and Technology Steering Group (DSTSG) will guide and support groups working on topics related to technology and data science. Those are the mechanisms for ICES for new innovations. Funding is outside ICES remit.

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<sup>2</sup> Article 9 Regional coordination and cooperation 1. As provided for in Article 25 of Regulation (EU) No 1380/2013, Member States shall coordinate their data collection activities with other Member States in the same marine region and shall make every effort to coordinate their actions with third countries having sovereignty or jurisdiction over waters in the same marine region. <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R1004&from=EN>



The SCICOM Chair noted that trying to align funding can be complicated, but it may be possible to use different funding lines through different means. There are possibilities to cooperate with stakeholders, to come forward and suggest the needs for specific innovation actions.

Iceland has good cooperation with their fisheries directorate, who also collect data. There is a need to look at new ways to more efficiently collect data.

Sweden supports the coordination and pooling of resources. Data collection should be done as efficiently as possible and there are different plans to share the burden. ICES has a role as an end-user but also as a link to countries beyond the EU. Data should be collected in a similar way across regions, and ICES has an important role to ensure that. The funding question maybe beyond what ICES can influence. The division of responsibilities between fisheries control agencies and agencies responsible for data collection is better to keep separate.

Germany noted that for European countries there will soon be a revision of the control regulation, and more data will be collected, need to check that this is better coordinated. It was suggested to discuss at Bureau what could be done.

The ACOM Chair noted that working with the industry could also be a better way to access data. And also raised concern about when enforcement and data collection responsibilities are combined.

US may contribute with shared experiences, for example industry collaboration is well developed in the US.

The SCICOM Chair noted the absence of sustained funding for large scale oceanographic programs. ICES should help to define how surveys can be integrated, can better collaborate with industry, and can make use of Transatlantic observing programs.

Ireland summarised the discussion noting that the ACOM report highlighted that bycatch advice and expertise are in demand, as are resources for benchmarks, and reviewers. The CSI:Resources letter sent to Council delegates in July, also highlighted where additional resources are needed:

*Assessing and providing advice for mixed fisheries/selectivity/fleet-based approaches; Ensuring the quality of fisheries management advice and expertise in management strategy evaluation; Assessing and managing the impact of fishing on the marine ecosystem.*

The Regional Coordination Groups must include the right people to foster innovation, also defining the needs in the EMFAF to make a list of these issues and recognise the priorities. What is important is context, need to be clear on innovation and what sampling might look like. ICES could begin to coordinate, but until a list with priorities has been decided, this requires further discussion.

**Action:** Council commended the work of the ACOM Chair and Advisory Committee.

At its next meeting Bureau should discuss how ICES can help find ways to resource benchmarks, reviewers, bycatch expertise, as well as assessing and providing advice for mixed fisheries/selectivity/fleet-based approaches; Ensuring the quality of fisheries management advice and expertise in management strategy evaluation; Assessing and managing the impact of fishing on the marine ecosystem.

Bureau should review the development in funding options for strengthening integrated monitoring and the potential use of data collected by control agencies.

## 5 Election process

Anne Christine Brusendorff, General Secretary reviewed the elections and approvals process (**CM 2020 Del-Doc 5.1**). A one-time procedural exception was approved by Council for 2020 to ensure the e-voting process runs smoothly during the online meeting, with one vote where the top-three candidates (most votes) will be elected. In advance of the meeting, all countries had confirmed their support for the procedure.

According to the Rules of Procedure:

Rule 11

ii) Any other Vice-President shall be elected for a period of three years and shall not be eligible for re-election for the immediately succeeding term;

Rule 5 (6)

At any time not more than one member of the Bureau shall be from the same member country.

Current Bureau membership includes: President Fritz W. Köster, DK, Bill Karp, US, Pierre Petitgas (FR), Per Sandberg (term concluding 2020), NO, Gerd Kraus, DE, and Manuela Azevedo (term concluding 2020), PT, Carl O'Brien (term concluding 2020), UK.

Nominations were submitted using the e-voting tool and accepted until 1 October 2020. The tool was configured so that submitted nominations are anonymous/confidential in line with the RoPs, Rule 5, 3.2. The results of the nominations were also communicated via the Council forum. The General Secretary confirmed with nominees their willingness to stand for election. Nominees willing to stand for election were requested to submit a short written statement (less than 300 words) declaring their interest. These documents were made available on SharePoint. The election was conducted via the e-voting tool between day 1 and day 2 of the Council meeting.

## 6 Outcome of elections and voting

As the first order of business on the second day of the Council meeting, the General Secretary reviewed the results of the election and congratulated Karin Victorin (SE), Paul Connolly (IE), and Pablo Abaunza (ES) for securing the highest number of votes and being elected to Bureau for the three-year term 2021-2023.

The outgoing members of Bureau, Per Sandberg (NO), Carl O'Brien (UK), and Manuela Azevedo (PT), were thanked for their service and contributions over the past three-years.

Outgoing and incoming Bureau members are encouraged to participate in the extraordinary Bureau meeting 17 November.

## 7 Report from the Science Committee

Jörn Schmidt, Chair of Science Committee provided an update on the progress of the Science Committee (**CM 2020 Del-Doc 7.1**)

The ICES Science Committee continues to support ICES science to grow in scale, scope, and impact. The Science Committee has continued to work with the ICES community and Secretariat to keep the ICES science programme dynamic, internationally relevant, and impactful; to ensure seamless links between science, data and advice; and to engage with scientists in ICES member countries and beyond by planning an annual cycle of meetings and workshops as well as the Annual Science Conference.

The COVID-19 pandemic has had a dominant effect on all aspects of daily life, and therefore also on how science in general, and the work of ICES expert groups has been carried out. Thanks to immense commitment and tireless work of the whole network, including all individual scientists and especially the Secretariat, the meeting activities and work continued, and ICES was able to reach key achievements.

In July, the transition between the outgoing and the incoming SCICOM chair was organised fully remotely and the new chair, Jörn Schmidt, took on his role in full on 1 August 2020.

Notable activities in 2020 included (i) the establishment of the Steering Group on Data Science and Technology (DSTSG); (ii) a stronger focus on supporting expert groups, including support for online meetings; (iii) furthering the engagement of new scientists participating in the ICES community; (iv) an increased frequency and strategic emphasis on science communication; (v) increasing the links between science and advice; and (vi) maintaining and developing international collaborations. These activities have taken place alongside the continued delivery of science outputs and publications by the expert groups.

One hundred and fifteen working groups, forty-five workshops and twenty benchmark workshops, supported by six steering groups, were active in 2020. Expert group meetings in 2020 saw a very high number of new participants, and had a higher overall attendance than in previous years.

Four new steering group chairs were elected in September 2020 to lead the new DSTSG and three existing steering groups: Ecosystem Observation Steering Group (EOSG), Ecosystem Processes and Dynamics Steering Group (EPDSG) and Integrated Ecosystem Assessments Steering Group (IEASG). The incoming chairs will work with the current chairs to ensure a smooth transition for 1 January 2021.

Several training courses have been cancelled or postponed to next year due to the COVID-19 pandemic. Two courses were moved online for 2020 – the Fish stock assessment and Bayesian training courses. The stock assessment course was fully booked, and went well. However, despite the potential further reach of online courses, online teaching is still very work-intensive, still has a limit to the number of participants, faces challenges working across time zones, and therefore requires further consideration in the near future.

The implementation of the ICES Science Plan will be further progressed and supported by the ongoing efforts to introduce more consistent and concise resolution forms, to improve and quality control expert group descriptions and terms of reference and to implement the resolutions database. The main priorities beyond this are detailed in the implementation plan.

ICES hosted a webinar 16 September 2020, *ICES reflections webinar on COVID-19 impacts*. The event was well attended reaching more than 600 people.

ICES President commended the work of the SCICOM Chair, and Science committee and noted the impressive levels of Science activities maintained through the challenging COVID-19 pandemic.

During the discussion the following points were noted:

Canada requested clarification on how SCICOM aims to better link to national science activities relevant for ICES activities. It was explained that the aim is to work bottom-up through some of the topics already identified (e.g. carbon sequestration). Build on the existing work, and try to better link national project involvement into the ICES network.

Germany requested clarification on the fees for the online training course. It was clarified that the online courses still cost the same to run, and therefore the fee was unchanged, and this was accepted by participants.

US acknowledged the impressive range of activities conducted by the Science Committee, and the smooth transition of leadership during a challenging period. The recruitment of Steering Group Chairs was acknowledged as being difficult. The SCICOM Chair noted that the challenge may also have been related to the need to recruit four chairs at one time. Although the process was difficult, the outcome was good with engaged experts.

Sweden acknowledged the impressive range of ICES publications, praising the timely release of the Scrubbers Viewpoint that was well received and discussed in OSPAR. Sweden also noted the challenge of ensuring that managers can access to information on EBM. In response it was explained, that an ACOM-SCICOM subgroup on EBM has been established and is working on how to bring all the ongoing work together.

France noted the breadth of activities with science flourishing from bottom-up. Need to also appreciate the gaps. The SCICOM Chair noted the Resource Coordination Tool (RCT) was noted as an important tool for tracking participation in the expert groups

### **Annual Science Conference**

SCICOM and the Secretariat are considering how to modify plans for the Annual Science Conference 2021, with travel restrictions and health and safety concerns from COVID-19 likely to continue. There will likely be additional resource implications for the conference. SCICOM will consider the implications of a changed format and work together with the Secretariat to ensure a comprehensive balance to meet the ICES science priorities.

The General Secretary also presented a summary of the member country responses that were provided as part of the advance preparation for the council meeting, related to the Annual Science Conference (ASC). The responses were summarised:

*Please provide your perspective on the format/structure of future ASCs taking into account in-person, online and hybrid possibilities and relevant experience.*

- A number of countries (BE, DE, LV, NL, PT, SE) have a general preference for an in-person ASC, referring to networking opportunities. Some of these countries refer to the need to investigate the possibilities for enhanced on-line participation. DK specifically refer to this as regards the 2021 ASC.
- One country (IE) finds that the ASC 2021 should be used to explore a new model for the ASCs.
- Another country (UK) finds that a physical 2021 ASC will be difficult due to current trajectory of the pandemic, and therefore a mixed format meeting desirable, with options to attend sessions remotely.

Ireland has submitted an invitation to host the 2022 Annual Science Conference, 10-16 September (CM 2020 Del-Doc 7.2). They aim to facilitate a new ASC model for 2022. Acknowledging some uncertainty, but also the importance of considering different scenarios and models that will set a new course towards future challenges. The experiences of the Secretariat as host of the 2021 ASC in adapting the conference to facilitate remote participation will benefit planning for 2022.

Ireland will work with SCICOM to identify the themes of the conference. But would like to have some themes of national importance addressed in the line-up. SCICOM is already starting to consider how to develop hybrid models and will continue to work on the overall structure of a hybrid ASC.

US has offered to support a joint ICES–PICES conference in 2023 (CM 2020 Del-Doc 7.3), and are looking at how to tackle some of the challenges, including the needed finances .

During the discussion the following points were noted:

Spain extended an offer from AZTI, to host an ICES Annual Science Conference in 2024, in San Sebastian.

UK is also working on a proposal to host an ASC in 2024, pending a suitable venue being identified.

Norway supported the suggestion for the Secretariat to explore the resources needed to make an online participation possible for 2021. Moving forward, offering more opportunities for remote participation should be embraced.

Germany also supported the idea to work on scenarios and options and for Bureau to discuss in November.

Canada also supported further exploration of hybrid conference models and tools to enable the conference, including networking.

ICES President acknowledged the multiple member countries expressing interest to host the Annual Science Conference as a very positive sign and expressed thanks for the offers and planning.

**Action:**

Council accepted the invitation of Ireland to host the Annual Science Conference 2022.

Council acknowledged the development of proposals from the US (joint ICES–PICES conference 2023, pending funding and preparations in a joint ICES/PICES/US group); Spain (San Sebastian); and the UK (venue and date to be confirmed) and supported to convene a high-level working group to prepare the joint ICES/PICES conference, including the US ICES and PICES Delegates, the ICES General Secretary, the PICES Executive Secretary, the SCICOM Chair and Head of Science Support, and key individuals from NOAA and the Department of State.

Council mandated the Secretariat to investigate the resource implications of a hybrid conference set-up, and based on this to report back to Bureau with suggestions for how to arrange the 2021 ASC (enhanced online participation or hybrid conference). These efforts and experiences can help to inform planning processes for future conferences.

An update will be provided to Bureau at its next meeting 17 November, 2020.

## 8 Increasing opportunities to engage with ICES expert groups through online open sessions

Jörn Schmidt, SCICOM Chair presented the proposal on behalf of SCICOM and ACOM for open online sessions as outlined in **CM 2020 Del-Doc 8.1**. The large number of online expert group meetings during the COVID-19 pandemic have provided greater opportunities for engagement in ICES, where participation is less likely to be limited by travel budgets and home and personal circumstances. However, there have been some challenges to ensure participation is limited to working group members or workshop participants, in part because e-invitations are easily forwarded beyond the membership list. To address this a reminder has been posted on the process on the WGCHAIRS forum and added to e-invitations. A new procedure proposal has been developed to help leverage this opportunity to expand the ICES network.

### Proposal:

Working groups and workshops should be allowed to include some defined forms of online activity during their meetings and for which participation would not be restricted to chair-invited members (working groups) or participants (workshops) as currently defined. We propose that this option would be available to all expert groups except those with [ACOM affiliation prior to 1 January 2019](#). Activities to be included and conditions that might apply may be described as follows.

*“When expert groups meet online the meetings can provide new opportunities for participation in ICES activities and allow groups to promote their work more widely. All expert groups that did not have ACOM affiliation prior to 1 January 2019 are permitted to include sessions in their online meetings that are open to participants who are not formally recognised as members (working groups) or participants (workshops). Online open sessions may be used to promote outputs and activities of the expert group, solicit information, stimulate and engage in scientific debate and develop collaborations.*

*The following requirements apply to open sessions:*

- *Invitations should be circulated separately from those used for the meetings of formal members (working groups) or participants (workshops)*
- *Expert group chairs are responsible for circulating “open session” invitations and arrangements for promotion and running of the session*
- *Open sessions are not used to fully address expert group terms of reference nor to make decisions on behalf of the expert group*
- *Chairs are to remind participants of the ICES [meeting etiquette](#).*
- *While the code of conduct applies, it is not necessary to enforce the conflict of interest discussion for these open sessions.*

During the discussion the following points were noted:

UK questioned if there had been any negative consequences in groups that had offered this open online format. Response: WGHIST reported good positive experiences with scientific presentations being well received, showcased the science being done by the group. So far no negative feedback. Structured in a very protective way. These events are advertised through social media.

Norway have been critical of opening expert group participation, but supported this development, stressing the importance of sticking to the defined protocol with clear separation between open sessions and ToRs.

The Head of Advisory Support reported that Secretariat staff are diligent at monitoring who participates in remote expert group meetings.

The SCICOM Chair agreed it would be useful to evaluate the experiences gained with this new protocol after one year.

**Action:**

In accordance with the Rules of Procedure and Resolution ICES CM 2008 Del-05, Council noted the suggested pilot process (three years) for a sub-set of ICES Expert Groups (not including ACOM EWGs<sup>3</sup>) to:

- allow expert groups to host open sessions during online meetings, where the focus is broader than their specific ToRs (i.e. the open session will be related to, but not specifically address the ToRs), and
- where the sessions are defined as open because participation it is not limited to expert group members.

Council supported this proposal and requested a progress report at the next Council meeting.

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<sup>3</sup> Not former ACOM expert groups listed in Annex 10 of the [Guidelines for Expert Groups](#)

## 9 Data and Information

Neil Holdsworth, Head of Data and Information presented an update from Data and Information services as described in **CM 2020 Del-Doc 9.1**.

We are awaiting the first evaluation response of the Data Centre Accreditation, which was submitted to Core Trust Seal in July 2020.

Two governance groups have come into operation in 2020, related to the Transparent Assessment Framework (TAF) and the acoustic data portal.

The agreement to establish a new Steering Group under SCICOM - the Data Science and Technology Steering Group (DSTSG) is an important recognition of the value and contribution of data science and services within ICES.

The Regional Database and Estimation System (RDBES) has modelled the complexity (and divergence) of commercial catch sampling across the ICES countries, an important first step in both defining the overall data model, but also in working towards greater convergence.

The ICES Data Centre continues to increase the breadth of data portals, but also the depth of content through a number of externally funded projects and contracts, notably for underwater noise and core competences in marine contaminants, oceanographic and biodiversity data will be enhanced through these to the benefit of the ICES community.

ICES President commended the work of the Data Centre, also the elegant way of using projects and contracts to fund activities.

During the discussion the following points were noted:

Norway noted that working on improving data quality is at the heart of getting high quality stock assessments. Norway is trying to strengthen data submission, and requested to have an overview from ICES, outlining what data are expected and when.

The Head of Data and Information explained that the Regional Coordination Groups of the EU DCF (RCGs) have run commercial catch data calls for the RDB hosted at ICES up until, however it would be beneficial if this would transition to an ICES data call, especially with non-EU countries that are contributing/will likely contribute data.

<b>Action:</b> Council commended the work of Data & Information services.
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## 10 Projects and further information on the revised mandate

Wojciech Wawrzynski, Head Science Support provided an update on external projects and the revised mandate for project participation granted by Council in 2019 as described in **CM 2020 Del-Doc 10.1**.

### Update on ICES project participation

There are 9 ongoing projects and 6 subcontracts, mostly by the ICES Data Centre, and dealing overall with the following topics:

- Ensuring hosting of the data beyond the project life cycle;
- Development of the acoustic data portal;
- Development of the OSPAR noise register;
- Consolidating ICES activities in the EMOD-NET;
- Developing standards for data and technical development of the MSFD indicators;
- Making the data available in the ICES system in line with the work of HELCOM;
- Further development of existing data sharing platforms.

### Projects and contracts in pipeline

- H2020 BG-10-2020 Fisheries in the full ecosystem context: 4 competing proposals (Advisory Department) – EBFM;
- LC-BG07-2019 The Future of Seas and Oceans Flagship Initiative (Advisory Board);
- Department for Environment Food and Rural Affairs (UK) – developing a Joint Cetacean Database Programme with the ICES Data Centre. -on behalf of the UK to ensure the data base long-term functionality – aligned with the ICES Working Group on Marine Mammal Ecology.

Newly started: Mission Atlantic- BG-08-2018-2019 All Atlantic Ocean Research Alliance Flagship Project focused on building capacity for IEA.

### Revised mandate

The approved revised mandate allows the secretariat to seek, participate and/or lead projects where:

- Research is not the main goal of the project;
- The project is oriented towards science coordination, programming, supporting use of the existing data and knowledge, dissemination of synthesised results, training;
- ICES is in an outstanding position to fulfil the requested tasks;
- The project scope is in line with the ICES Strategic, Science, and Advice Plans.

The 2015 Council decision already allowed the secretariat to lead EU ‘Coordination and Support Action’ projects to build on the strengths of the organization. The revised mandate gives the secretariat the mandate to actively engage in this type of projects.

Reasoning: There are changes expected in the next EU Framework Program, and with future strategic instruments ICES needed greater flexibility to operate on strategic projects. Given the potential of research coordination and research support mechanisms in Horizon Europe, it is important that ICES has the potential to play a prominent role for the benefit of its member states.

The Netherlands requested clarification on if the “old” ICES project policy ensuring that ICES is offering its services (to competing consortia) in a non-exclusive manner is still part of the new

ICES project Policy, to prevent ICES becoming a potential competitor of its contributing institutes. It was confirmed that this “non-exclusive ICES participation” is still part of the new ICES project policy.

**Action:** Council noted that the expanded mandate for ICES participation in projects provides flexibility in a changing funding landscape, and does not change the existing rules of engagement as defined in ICES project policy. Project reporting will continue to be an annual agenda item for discussion by Council delegates.

## 11 Strategic issues

### 11.1 UN Decade of Ocean Science for Sustainable Development as well as Arctic, and cooperation with PICES

Anne Christine Brusendorff, General Secretary provided an update on the status of work in support of the UN Decade of Ocean Science for Sustainable Development as well as Arctic, and cooperation with PICES as described in **CM 2020 Del-Doc 11.1**.

A proposal for a Joint ICES Council Strategic Initiative/PICES Study Group to plan participation in the UN Decade of Ocean Science (ICES–PICES Ocean Decade) was submitted for approval by 21 September to the ICES and PICES delegates. Information was provided to ICES Delegates on the Council Forum. The group will be co-chaired by Arran McPherson (CA), Sissel Rogne (NO), Steven Bograd (US), and another PICES appointed Co-chair (TBD).

The 4th ICES/PICES Early career scientist conference is planned for 2022. ICES has secured funding for the conference, with Canada volunteering to host as one of their Ocean Decade contributions.

#### Arctic

As part of the UN Ocean Decade a first Arctic Ocean Decade Workshop was arranged in Tromsø Norway, in January 2020. This was to be followed by a three-day workshop in April in Copenhagen, Denmark. Due to the COVID-19 pandemic this was transformed into a series of online workshops to be arranged throughout the autumn. Seven working groups, following the key societal outcomes of the UN Ocean Decade will take place in October/November.

Anne Christine Brusendorff, ICES General Secretary, and Henry Huntington, the Ocean Conservancy, USA will co-chair working group 3, A Productive Ocean.

The third Arctic Science Ministerial (ASM3) has been postponed to 8–9 May 2021 in Tokyo, Japan. ICES and PICES have jointly provided responses to the ASM3 survey on international collaboration and cooperation, upon request by the co-hosts Iceland and Japan. A vital element of ASM3 is the development of education and capacity building for future generations, with an emphasis both on scientific and local knowledge in Arctic and non-Arctic States.

The ACOM Chair noted that ICES has now received a formal request in the standing advice for NEAFC, in the NEAFC part of the Central Arctic Ocean.

**Action:**

Council noted:

- support for the work of the Joint ICES Council Strategic Initiative/PICES Study Group to plan participation in the UN Decade of Ocean Science (ICES–PICES Ocean Decade);
- the upcoming Arctic regional workshop, under the UN Ocean Decade, taking place in virtual meetings, 23 October, 5 November and if needed 18 November;
- the Arctic Science Ministerial (ASM3), taking place, 8–9 May 2021 in Tokyo, Japan, co-hosted by Iceland and Japan, and the need to investigate the possibility at national level to bring attention to ICES activities;
- the on-going work under the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean, and the need to investigate the possibility at national level to bring attention to ICES activities.

## 11.2 Council Strategic Initiative on Maritime Transatlantic Cooperation

Bill Karp, reported on ongoing activities with relevance for the Council Strategic Initiative on Maritime Transatlantic Cooperation (CSIMTC) as described in **CM 2020 Del-Doc 11.2**.

The intention is to have regular high-level joint NOAA/DFO/ICES meetings (began in 2019, next will be in 2021). During the first meeting several shared interests for transatlantic scientific co-operation were identified in areas such as monitoring, data, stock assessment and capacity building. New expert groups were established as a follow up.

Regarding the capacity building topic, the WKEDU initiative is underway and will convene a virtual workshop in November/December to begin developing a Graduate/Post Graduate Education Strategy to Meet Future ICES Advisory Needs. The goal is to facilitate collaboration among educational institutions in ICES Member Countries. Approximately 15 such institutions from Canada, the US, and Europe will participate in the workshop.

A joint NOAA ICES PICES process has been initiated to identify fisheries science goals and actions, which will contribute to the UN Decade of Ocean Science. "Fisheries Information and Data Management Modernization" has been suggested as a possible focus area which could lead a global initiative and cooperation with others bodies, such as UN agencies and RFMOs

Many ICES expert groups have a strong transatlantic emphasis. These include those working on Integrated Ecosystem Assessments, some survey EGs, and many EGs which focus on methodologies.

Ongoing and past projects Atlantic Ocean Research Alliance and Mission Atlantic are also relevant and help to address broader challenges to maintain a focus on transatlantic cooperation.

ICES President noted the good development within this work area.

**Action:** Activities with transatlantic relevance will continue to be tracked, and progress reports provided to the annual Council meeting.

## 12 Secretariat Report

Anne Christine Brusendorff, General Secretary presented a report summarizing the work ongoing in the secretariat as described in **CM 2020 Del-Doc 12.1**.

Over the past few years, the ICES community, including SCICOM, ACOM, and Expert Group members, have asked for a more comprehensive overview of resolutions that is fully searchable and able to support broader reporting. As such, the Secretariat has been working closely with ACOM and SCICOM to develop a streamlined process for submission and tracking of resolutions. The technical aspects of the database and the workflow have been formulated over the past few months, and will continue to need some input as the database continues to be developed. It is anticipated that the first resolution rolled out for use in early December with the others to follow in 2021.

Administration has been reviewing internal processes for compliance with the EUs General Data Protection Regulation (GDPR). As an international organization, ICES may not be bound by GDPR, however, it is good practice and the Secretariat aims to protect the personal data with which it is entrusted.

The Secretariat Administration is also working with the Global Ocean Institute at the World Maritime University on the project “Empowering women for the United Nations Decade of Ocean Science for Sustainable Development”. A WMU team, including ICES Coordinating Officer, Ellen Johannesen will undertake research with a focus on gender equality and the empowerment of women in the conduct and delivery of ocean scientific research. A greater focus on collecting demographic information for the ICES network, in connection with nominations will be part of the project, in line with the ICES Strategic Plan.

ICES Secretariat Human resources department have been busy following the adaptations needed to ensure staff well-being for COVID-19. Recruitments have continued, and work continues to resolve specific challenges for internationally-recruited staff.

The Secretariat Communications departments is a small and efficient team working to increase ICES impact, a major project this year was website restructuring to improve usability.

ICES Journal of Marine Science (IJMS) currently follows a hybrid journal model, with the majority of articles accessed through subscription to the journal. Authors can pay an additional fee (APC) making articles immediately open access (OA). Looking forward, IJMS may use read-and-publish deals –covering the APCs for anticipated publications and access to a whole journal portfolio. In such deals IJMS will be part of a bigger package of OUP journals. ICES is not informed of the details of each individual deal, and not involved in their negotiation.

In 2018, the Danish government announced plans to move ICES HQ to a new location in Copenhagen. Over the past two years, a great administrative effort has gone into compiling our facility needs, identifying a suitable relocation site, contacting suppliers and cooperating with Danish authorities. Due to coordination issues between the various Danish authorities involved in the move project, we still await a final answer on the project financing status and, thus, timeline of this move.

The wide scope of activities being followed by the Secretariat was commended.

**Action:** Council extended its appreciation to the Secretariat for the wide scope of working and continued dedication during the difficult year.

## 13 Closing remarks

Fritz Köster, ICES President thanked everyone for their contributions to the meeting. Conducting the meeting remotely was challenging due to the timeframe and need to accommodate participants across timezones. In future, greater planning on the format and the distribution of the meeting over more days, with shorter meeting times on each day will be considered. In 2020, Bureau has six remote meetings. Greater consideration will be given to how to engage more Council delegates when necessary.

## 14 Closed session – General Secretary contract extension

Council delegates met in a closed session to discuss the extension of the contract of the General Secretary. The current contract of Anne Christine Brusendorff, continues until end January 2022. The contract has been extended once, in February 2018, for four (4) years. Bureau members have recommended that the General Secretary's contract be prolonged for another two (2) years, corresponding to a full six (6) year second term.

This recommendation is based on the perception of Anne Christine Brusendorff's excellent work and a discussion with her regarding the challenges faced by the organization, the business model, and the organisation of the Secretariat, also under present extraordinary circumstances with longer-term impacts to be expected. A discussion how to fulfil the ambitions set out in the Strategic plan was transferred to an extraordinary Bureau meeting planned for 17 November including the other pillars of the organization as well as outgoing and incoming Bureau members.

Council acknowledged the excellent work of Anne Christine Brusendorff, while also noting the ambiguity in the Rules of Procedure regarding the possibility to prolong the contract of the General Secretary for additional terms beyond the 2<sup>nd</sup> 6 year term. There were differing opinions on how to interpret the rules and if it was more desirable to have flexibility or well defined rules.

Council unanimously supported the two-year contract extension of the General Secretary, noting that a re-advertisement of the position should be planned for late 2022, and allowing for the possibility that the present General Secretary could apply again. The number of consecutive terms the position may be filled by the same person may need to be defined, also in preparation for the re-advertisement of the position in 2022.

**Action:** Council supported the Bureau recommendation to extend the contract of Anne Christine Brusendorff as General Secretary until 31 January 2024, corresponding to the end date of a 2<sup>nd</sup> term of 6 years. This recommendation is based on the excellent work record of Anne Christine Brusendorff as General Secretary since filling of the position 1 February 2011 as well as a discussion with the Bureau on 20 October 2020. The discussion focused on challenges faced by the organisation, its business model, and the responsibilities of the General Secretary as well as the organisation of the ICES secretariat.

## 15 List of Actions

Issue	Action/Outcome
<p>2.1 Council Strategic Initiative on Resources to support member countries contributions to ICES advice and science, as well as education and training</p>	<p>Council supported and approved the ToRs for the Workshop on Graduate/Post Graduate Education Strategy to Meet future ICES Advisory needs</p> <ol style="list-style-type: none"> <li>1. Summarize expertise required to meet current advisory needs and identify likely future expertise requirements for providing advice that supports ecosystem-based decision-making for the management of human activities in marine ecosystems.</li> <li>2. Evaluate opportunities and impediments related to building interdisciplinary, multi-institutional, international graduate/post graduate programs (while the primary focus is to address future ICES advisory needs, broader capacity building needs should also be taken into account)</li> <li>3. Review/summarize current single- and multi-institutional programs that support needs identified above and identify successful models</li> <li>4. Identify issues that must be resolved to allow this initiative to move forward, describe next steps and a draft a roadmap for developing a curriculum within 3 years</li> <li>5. Describe/propose a process for accomplishing these TORs, including possible formation of an expert group and further workshops</li> <li>6. Evaluate and incorporate approaches for improving (post) graduate education opportunities for women, underrepresented minorities, and indigenous people through this initiative</li> </ol>
<p>2.2 COVID-19 Pandemic ICES response</p>	<p>Council supported the establishment of a Bureau led Council sub-group to look into how changes caused by societal response to the COVID-19 pandemic will affect ICES work in the short and long-term.</p> <p>The sub-group will include representation from ACOM/SCICOM/Data&amp;Information and Secretariat to elaborate a draft report with specific recommendations. Council members Matt Gubbins (UK), Paul Connolly (IE), Piotr Margonski (PL), Chris Zimmerman (DE), Florence Cayocca (FR) also volunteered to participate in the work of the sub-group.</p>
<p>2.3 ICES in a net-zero CO2 emission world</p>	<p>Council agreed to establish the Bureau working group on ICES in a net-zero emission world to address TORs 1-4. Membership in this group will be broad to engage expertise from within and outside ICES. The work will be informed by the sub-groupe set-up under 2.2 (Pandemic Lessons Learned).</p> <p>Council requests SCICOM to report back on TORs 5-7</p> <p>Council delegates are requested to provide updated information on relevant national policies and needs</p> <p>The work will also aim to engage with the community (e.g. plans for a webinar)</p> <p>Bureau will revise the draft policy statement based on the Council discussion. Bureau is mandated to approve and publish the statement.</p>

3.1 Report from Finance Committee	<p>Finance Committee is requested to look back at the financial development over the past five years, or a timescale that is fund appropriate, also considering the project income.</p> <p>Council approved the final accounts for 2019, as well as the proposed 2021 budget.</p> <p>Council provided information via an online questionnaire on what further documentation would be needed to support an increase in national contributions for the forecast 2022 budget, as recommended by Bureau and Finance Committee.</p> <p>The Secretariat and Finance Committee will follow-up on the suggestions provided by Council members and an e-voting/approval process on the 2022 forecast budget will be planned for January 2021.</p>
3.2 Strategic Investments	<p>Council will be kept updated on the need for further investments in support of the move of ICES HQ, remote meeting facilities, as well as training. Coordination group will report back when more information is available.</p>
4 Report from the Advisory Committee	<p>Council commended the work of the ACOM Chair and Advisory Committee.</p> <p>At its next meeting Bureau should discuss how ICES can help find ways to resource benchmarks, reviewers, bycatch expertise, as well as assessing and providing advice for mixed fisheries/selectivity/fleet-based approaches; Ensuring the quality of fisheries management advice and expertise in management strategy evaluation; Assessing and managing the impact of fishing on the marine ecosystem.</p> <p>Bureau should review the development in funding options for strengthening integrated monitoring and the potential use of data collected by control agencies.</p>
7 Report from the Science Committee	<p>Council accepted the invitation of Ireland to host the Annual Science Conference 2022.</p> <p>Council acknowledged the development of proposals from the US (joint ICES–PICES conference 2023, pending funding and preparations in a joint ICES/PICES/US group); Spain (San Sebastian); and the UK (venue and date to be confirmed) and supported to convene a high-level working group to prepare the joint ICES/PICES conference, including the US ICES and PICES Delegates, the ICES General Secretary, the PICES Executive Secretary, the SCICOM Chair and Head of Science Support, and key individuals from NOAA and the Department of State.</p> <p>Council mandated the Secretariat to investigate the resource implications of a hybrid conference set-up, and based on this to report back to Bureau with suggestions for how to arrange the 2021 ASC (enhanced online participation or hybrid conference). These efforts and experiences can help to inform planning processes for future conferences.</p> <p>An update will be provided to Bureau at its next meeting 17 November, 2020.</p>
8 Increasing opportunities to engage with ICES expert groups	<p>In accordance with the Rules of Procedure and Resolution ICES CM 2008 Del-05, Council noted the suggested pilot process (three years) for a sub-set of ICES Expert Groups (not including ACOM EWGs) to:</p>

through online open sessions	<ul style="list-style-type: none"> <li>- allow expert groups to host open sessions during online meetings, where the focus is broader than their specific ToRs (i.e. the open session will be related to, but not specifically address the ToRs), and</li> <li>- where the sessions are defined as open because participation it is not limited to expert group members.</li> </ul> <p>Council supported this proposal and requested a progress report at the next Council meeting.</p>
9 Data and Information	Council commended the work of Data & Information services.
10 Projects and further information on the revised mandate	Council noted that the expanded mandate for ICES participation in projects provides flexibility in a changing funding landscape, and does not change the existing rules of engagement as defined in ICES project policy. Project reporting will continue to be an annual agenda item for discussion by Council delegates.
11.1 UN Decade of Ocean Science for Sustainable Development as well as Arctic, and cooperation with PICES	<p>Council noted:</p> <ul style="list-style-type: none"> <li>- support for the work of the Joint ICES Council Strategic Initiative/PICES Study Group to plan participation in the UN Decade of Ocean Science (ICES–PICES Ocean Decade);</li> <li>- the upcoming Arctic regional workshop, under the UN Ocean Decade, taking place in virtual meetings, 23 October, 5 November and if needed 18 November;</li> <li>- the Arctic Science Ministerial (ASM3), taking place, 8–9 May 2021 in Tokyo, Japan, co-hosted by Iceland and Japan, and the need to investigate the possibility at national level to bring attention to ICES activities;</li> <li>- the on-going work under the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean, and the need to investigate the possibility at national level to bring attention to ICES activities.</li> </ul>
11.2 Council Strategic Initiative on Maritime Transatlantic Cooperation	Action: Activities with transatlantic relevance will continue to be tracked, and progress reports provided to the annual Council meeting.
12 Secretariat Report	Council extended its appreciation to the Secretariat for the wide scope of working and continued dedication during the difficult year.
14 Closed session – General Secretary contract extension	Council supported the Bureau recommendation to extend the contract of Anne Christine Brusendorff as General Secretary until 31 January 2024, corresponding to the end date of a 2nd term of 6 years. This recommendation is based on the excellent work record of Anne Christine Brusendorff as General Secretary since filling of the position 1 February 2011 as well as a discussion with the Bureau on 20 October 2020. The discussion focused on challenges faced by the organisation, its business model, and the responsibilities of the General Secretary as well as the organisation of the ICES secretariat.



## 16 List of Participants

Member Name	Member Country/Role
Fritz W. Köster	ICES President
Hans Polet	Belgium
Serge Scory	Belgium
Alain Vezina	Canada
Nis Christiansen	Denmark
Anna Rindorff	Denmark
Markus Vetemaa	Estonia
Tuuli Levandi	Estonia
Ari Leskelä	Finland
Paula Kankanpaa	Finland
Florence Cayocca	France
Pierre Petitgas	France
Christopher Zimmermann	Germany
Gerd Kraus	Germany
Gudmundur Thordarson	Iceland
Sigurdur Gudjonsson	Iceland
Ciaran Kelly	Ireland
Paul Connolly	Ireland
Didzis Ustups	Latvia
Jolanta Cesiulienė	Lithuania
Joost Backx	Netherlands
Tammo Bult	Netherlands
Per Sandberg	Norway
Geir Huse	Norway
Piotr Margonski	Poland
Manuela Azevedo	Portugal
Maria Ana Martins	Portugal
Eduardo Balguerias	Spain
Pablo Abaunza	Spain
Karin Victorin	Sweden
Jacob Hagberg	Sweden

Carl O'Brien	United Kingdom
Matthew J. Gubbins	United Kingdom
Jonathan A. Hare	United States
William (Bill) Karp	United States
Mark Dickey-Collas	ACOM Chair
Jörn Schmidt	SCICOM Chair
Amjad Iqbal	ICES Secretariat
Anne Christine Brusendorff	ICES Secretariat
Ellen Johannesen	ICES Secretariat
Lotte Worsøe Clausen	ICES Secretariat
Malene Eilersen	ICES Secretariat
Neil Holdsworth	ICES Secretariat
Rachel West Knudsen	ICES Secretariat
Søren Toft	ICES Secretariat
Helle Falck	ICES Secretariat
Wojciech Wawrzynski	ICES Secretariat



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Council meeting

October 2020

Del-Doc 1.1

Agenda

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## ICES 108<sup>th</sup> Statutory Meeting

By online meeting

Chair: Fritz W. Köster, ICES President

21–22 October 2020

Day 1 (16:00-21:00 CEST)

Day 2 (16:00- 21:00 CEST)

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### Day 1 Wednesday 21 October 2020

- |                                                                                                                                                                                          |               |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|
| 1. Opening and welcome                                                                                                                                                                   | 16:00         |
| 1.1. Introduction of <a href="#">agenda</a> and timetable (Fritz Köster, ICES President) 1.2. <a href="#">Follow-up on actions and decisions</a> taken at the 2019 Council meeting       |               |
| 2. ICES in a changing landscape                                                                                                                                                          | 16:10         |
| 2.1. <a href="#">Council Strategic Initiative on Resources</a> to support member countries contributions to ICES advice and science, as well as education/training (Bill Karp, US) 16:15 |               |
| 2.2. COVID-19 Pandemic ICES response<br><a href="#">ICES document</a><br><a href="#">Irish document</a><br>(Anne Christine Brusendorff, General Secretary, Paul Connolly, IE) 17:10      |               |
| 2.3. <a href="#">ICES in a net-zero emission world</a> (Bill Karp, US)                                                                                                                   | 17:25         |
| Health Break                                                                                                                                                                             | 18:25 -18: 45 |
| 3. Finances                                                                                                                                                                              | 18:45         |
| 3.1. <a href="#">Report from Finance Committee</a> (Ari Leskelä, Chair of Finance Committee)                                                                                             |               |
| 3.2. <a href="#">Strategic Investments</a> (Anne Christine Brusendorff, General Secretary)                                                                                               |               |
| Health Break                                                                                                                                                                             | 19:45-19:55   |
| 4. <a href="#">Report from the Advisory Committee</a> (Mark Dickey-Collas, Chair of Advisor Committee)                                                                                   | 19:55         |
| 5. <a href="#">Review of elections</a> and voting to be completed (Anne Christine Brusendorff, General Secretary)                                                                        | 20:55         |
| End of Day 1                                                                                                                                                                             | 21:00         |

## Day 2 Thursday 22 October

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6. Outcome of elections and voting (Anne Christine Brusendorff, General Secretary) 16:00
7. [Report from the Science Committee](#) (Jörn Schmidt, Chair of Science Committee) 16:10
  - [7.2 Annual Science Conference – Ireland](#)
  - [7.3 Annual Science Conference – USA](#)
  - [7.4 Annual Science Conference – 2021](#)
8. [Increasing opportunities to engage with ICES expert groups](#) through online open sessions (Jörn Schmidt, Mark Dickey-Collas) 17:10
- Health break 17:35
9. [Data and Information](#) (Neil Holdsworth, Head of Data and Information) 17:50
10. [Projects](#) and further information on the revised mandate (Wojciech Wawrzynski, Head Science Support) 18:30
- Health break 19:00
11. Strategic issues (Anne Christine Brusendorff, General Secretary) 19:15
  - 11.1. [UN Decade of Ocean Science for Sustainable Development](#) as well as Arctic, and cooperation with PICES
  - 11.2. [Council Strategic Initiative on Maritime Transatlantic Cooperation](#) (Bill Karp, US)
12. [Report from Secretariat](#) (Anne Christine Brusendorff, General Secretary) 19:45
13. Closing remarks (Fritz Köster, ICES President) 20:15
- End of Day 2 21:00**



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Council Meeting

October 2020

CM 2020 Del Doc 1.2

Agenda item 1.2

## President's Review

Council delegates will be invited to review the follow-up, in relation to actions decided at the 2019 Council meeting.

Agenda item	Council Action	Follow-up
ICES Strategic Plan	Member Countries will be invited to provide further updates on national level activities profiling ICES at upcoming Council meetings.	Given the shortened format of the 2020 Council meeting any updates may be provided via the Council forum.
UN Observer Status	<p><b>Council noted:</b></p> <ul style="list-style-type: none"><li>- the involvement of ICES in various UN work, under existing agreements, and ongoing negotiations for new agreements/initiatives, and efforts made to communicate ICES work and experience.</li><li>- the involvement of the ICES community to ensure that relevant work of ICES is being shared, to begin with focusing on areas beyond national jurisdiction and an ICES Highlights Series on ICES work directly related to the UN Decade of Ocean Science, and where possible furthering cooperation with other IGOs establishing joint groups, and other joint activities.</li><li>- on-going discussions with PICES, and potentially other IGOs on how we can jointly provide input to UN processes, on our independent and joint activities.</li></ul> <p><b>Council supported the suggestions:</b></p> <ul style="list-style-type: none"><li>- to establish links with national counterparts taking part in the work mentioned above, and share relevant ICES material.</li></ul>	<p>Thematic documents "Fact sheets" have been developed communicating ICES work</p> <p><a href="https://www.ices.dk/news-and-events/press-room/Pages/default.aspx">https://www.ices.dk/news-and-events/press-room/Pages/default.aspx</a></p> <p>For specific activities, see agenda item 11, Doc 11.1.</p>

Agenda item	Council Action	Follow-up
	<p>- to submit proposals to the Secretariat for development of thematic material (2-page information documents) that could be relevant in other UN fora, and where ICES presentations could be relevant.</p>	
Arctic	<p>Council noted and supported the slightly modified/revisited proposal, outlining areas that ICES could contribute to the FiSCAO scientific discussions, for a joint ICES/PICES/NOAA pilot study. This proposal will also be discussed with and presented at the PICES Governing Council meeting in October.</p> <p>Council delegates to consider and communicate opportunities for ICES and PICES engagement in the Arctic Science Ministerial to take place in 2020, in Japan and co-hosted by Iceland, the latter in their capacity as Arctic Council Chair.</p>	<p>The Arctic Science Ministerial (ASM3) has been postponed to 8–9 May 2021 in Tokyo, Japan. ICES and PICES have jointly provided responses to the ASM3 survey on international collaboration and cooperation. See Agenda item 11, Doc 11.1.</p> <p>ICES and PICES Secretariats shared a document on their (joint) Arctic work, to the first meeting of Signatories to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean. And the ACOM Chair participated and gave a presentation at the first meeting of the Provisional Scientific Coordinating Group.</p> <p>Given the data originally planned for use in the pilot study might not be representative, other engagements might serve ICES and PICES better, inter alia through obtaining observer status. PICES, and the PICES chair from NOAA have been informed that other possibilities should be pursued to ensure meaningful ICES/PICES engagement in the 2018 CAO Agreement,</p>

Agenda item	Council Action	Follow-up
		potentially through data and information management.
Project participation	<p>Council will be requested to vote via e-voting procedure on the revised 2015 Council decision on project participation:</p> <p>Council supports the proposal for ICES to seek, participate and/or lead projects where:</p> <ul style="list-style-type: none"> <li>• Research is not the main goal of the project;</li> <li>• The project is oriented towards science coordination, programming, supporting use of the existing data and knowledge, dissemination of synthesised results, training;</li> <li>• ICES is in an outstanding position to fulfil the requested tasks;</li> <li>• The project scope is in line with the ICES Strategic and Science Plans.</li> </ul> <p>Given the potential of research coordination and research support mechanisms in the new EU framework programme, it is important that ICES has the potential to play a prominent role, also for the benefit of its member countries.</p>	<p>The revision was approved, with 14 votes for, 1 vote against, and 3 abstain.</p> <p>A further update will be provided under agenda item 10, see also Doc 10.1</p>
Finance	<p>Council agreed to the new reporting format, requesting to add a conclusion by the Bureau on interpretation of the economy of the organization.</p> <p>Council approved the final accounts 2018, including Audit Book.</p>	<p>New format of the finance report has been implemented incl. conclusion statement to be reviewed by Council. Further discussion under agenda item 3, Doc. 3.1.</p>

Agenda item	Council Action	Follow-up
	Council approved the draft budget 2020, noting the national contributions were already decided.	
Forecast Budget 2021	The Secretariat will prepare a revised forecast budget for 2021, including any updates based on the outcome of MoU negotiations and project applications as well outlining consequences in advance of e-voting in January.	Council voted to approve the 1.7% increase for 2021 by intersessional vote. Forecast budget 2021 to be approved by Council as presented in Doc. 3.1, Attachment 1.
Equity/Strategic investments	Council supported the proposal on equity investments, with the item on Strategic Initiatives to be removed and included to the core budget, apart from an approval of funds from equity to support the UN Decade Of Ocean Science, including the January North Atlantic Workshop in Halifax, Canada. The rest of the items were supported as described in CM 2019 Del-3.3.	An update will be provided in Agenda item 3.2
New Clients and changes to the MoUs and Administrative Agreements	Council agreed that the costs of equity investments should also be paid by advice re-requesters, and mandated the General Secretary to negotiate the suggested cost share key with intergovernmental advice requesters, within the current process of updating existing and developing new MoUs.	An update will be provided under agenda item 3.1



Agenda item	Council Action	Follow-up
Advisory Plan	Council supported the development of the Advisory Plan and noted that the launch of the new plan will take place in December 2019.	The Advisory plan has been launched publically and is available online, with the Strategic Plan, and Science Plan.  <a href="http://www.ices.dk/about-ICES/how-we-work/Pages/Our-strategy.aspx">http://www.ices.dk/about-ICES/how-we-work/Pages/Our-strategy.aspx</a>
CSI:Resources/ WKEDU	Action: Council Delegates interested to participate in the capacity building workshop, or who have contacts to relevant universities and institutes, are requested to inform the Secretariat, and First Vice-President Bill Karp.	An update will be provided under agenda item 2.1, Doc. 2.1.
CSI:Resources	Action: CSI:Resources will continue to work within Bureau during 2020. The ToRs will be re-revised and circulated to Council for review.	An update will be provided under agenda item 2.1.
Council Strategic Initiative on Maritime Transatlantic Cooperation	Action: Council noted the good progress of the Council Strategic Initiative on Maritime Transatlantic Cooperation, and supported the continued work of the group.	An update will be provided under agenda item 11.2.
Report from SCICOM	Council commended Simon Jennings, SCICOM Chair and thanked him for his service specifically noting the good progress towards realizing the goals of the Strategic and Science plans.	An update will be provided under agenda item 7., Doc. 7.1.
2019 and forthcoming Annual Science Conferences	Council delegates were requested to consider the possibility to host a future Annual Science Conference, with 2022 quickly approaching, and a host needed.	An update will be provided under agenda item 7.

Agenda item	Council Action	Follow-up
	A small informal working group will be created including Council Delegates from the US and Canada, as well as the General Secretary and Head of Science Support, as well as PICES representatives to explore the possibilities for a joint annual meeting between ICES and PICES. The group will report to Bureau.	
ICES Advisory Services	ACOM will be asked to review the code of conduct for stakeholder engagement and will report back to the Council on actions taken and whether this has led to better outcomes in 2020.	An update will be provided under agenda item 4, Doc 4.1.
Data and Information Services	Action: Council commended the efforts on quality assurance of data and data flows contained in the report of Data and Information Services, noting that the Core Trust Seal Accreditation process is developing and that the progress reports on TAF and RDBES informed the discussion on equity investments in agenda item 3.1.	An update will be provided under agenda item 9, Doc. 9.1.

Agenda item	Council Action	Follow-up
Secretariat	<p>Council supported and noted:</p> <ul style="list-style-type: none"> <li>• the developments within administrative systems, including the resolutions database and delegates dashboard/nomination portal.</li> <li>• the activities of the Communications department, and the project to restructure the contents of the website.</li> <li>• the report on human resources and other administrative developments, and specifically steps taken to ensure equal treatment of all ICES employees, despite nationality and residence.</li> </ul> <p>Action: The Secretariat will send a specific request to Council Delegates to provide appropriate contact information for their country regarding discussion on specific agreements between all ICES Contracting Parties and ICES, on privileges and immunities of the organisations employees.</p>	<p>An update will be provided under agenda item 12, Doc. 12.1.</p> <p>Work on specific agreements between all ICES Contracting Parties and ICES, on privileges and immunities of the organisations employees has been delayed, but is planned for 2021.</p>
ICES CO2 footprint	<p>Action: Work on this initiative will continue within Bureau during 2020. Council members are encouraged to provide feedback to the document by correspondence.</p>	<p>An update will be provided under agenda item 2.3, Doc. 2.3.</p>

## Workshop on Graduate/Post Graduate Education Strategy to Meet Future ICES Advisory Needs (WKEDU)

The Council Strategic Initiative on Resources has developed a proposal to support long-term capacity building issues in education and work has begun to develop a strategy which will involve coordination among North American and European Universities to develop multidisciplinary, multi-institutional coursework, research opportunities and scientific personnel exchanges that will build capacity (through graduate- and post-graduate education) for meeting future ICES science-based advisory needs. To further this initiative, a workshop will be carried out.

[WKEDU](#) (Workshop on Graduate/Post Graduate Education Strategy to Meet Future ICES Advisory Needs) will meet remotely in November/December 2020 to address the following Terms of Reference:

- 1) Summarize expertise required to meet current advisory needs and identify likely future expertise requirements for providing advice that supports ecosystem-based decision-making for the management of human activities in marine ecosystems.
- 2) Evaluate opportunities and impediments related to building interdisciplinary, multi-institutional, international graduate/post graduate programs (while the primary focus is to address future ICES advisory needs, broader capacity building needs should also be taken into account)
- 3) Review/summarize current single- and multi-institutional programs that support needs identified above and identify successful models
- 4) Identify issues that must be resolved to allow this initiative to move forward, describe next steps and draft a roadmap for developing a curriculum within 3 years
- 5) Describe/propose a process for accomplishing these TORs, including possible formation of an expert group and further workshops
- 6) Evaluate and incorporate approaches for improving (post) graduate education opportunities for women, underrepresented minorities, indigenous people and fishers through this initiative



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Council Meeting

October 2020

Del Doc 2.2.1

Agenda item 2.2

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## Discussion Document to ICES Council 2020

### **Lessons Learned in Working through the 2020 COVID-19 pandemic.**

#### **Some thoughts and recommendations from Ireland.**

*Informing a debate on new working norms at ICES.*

*Paul Connolly and Ciaran Kelly*

*ICES Delegates for Ireland*

*(Final Version @ 18<sup>th</sup> September 2020)*

*COVID-19 will be remembered as the virus that stopped the world. This discussion document outlines some of Ireland's experiences in working through the COVID pandemic during 2020 and particularly with the ICES marine science community. It also draws some insights from recent published articles and literature on the impacts of COVID-19 on the broader science community. In 2020, a new way of working in Ireland adhered to Government and public health guidelines, with the key objective to ensure staff wellbeing and service delivery. Like all ICES Member Countries, Ireland has been dealing with the move to remote working, the impacts on data collection, the ban on international travel and meetings, the challenge of ensuring delivery of our research project commitments, our scientific services to the Irish Government, the EU and our national and international partners. The COVID-19 pandemic has catalysed a deep discussion in society on the future of work and has focused attention on the quality of life, wellbeing, working from home, the benefits of remote meetings, reducing travel, reducing climate impacts of travel, and the enormous cost savings that have been made in travel budgets. This document consolidates some thoughts on these issues and provides four recommendations for ICES Council consideration. The intent is to provoke some thinking outside the box on how ICES should respond to the challenges and opportunities presented by the Covid19 pandemic. The COVID 19 situation is a great opportunity for ICES to reflect on the opportunities and benefits of a new working norm.*

*"Technology now allows people to connect anytime, anywhere, to anyone in the world, from almost any device. This is dramatically changing the way people work, facilitating 24/7 collaboration with*

*colleagues who are dispersed across time zones, countries, and continents.” Michael Dell*

## 1. Introduction

In late 2019, a novel coronavirus, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), was identified as the cause of an outbreak of an acute respiratory illness in Wuhan, China. In February 2020, the World Health Organisations (WHO) designated the disease as COVID-19, which stands for coronavirus disease 2019 which is the disease caused by the virus SARS-CoV-2. Since the first reports of COVID-19, the infection has spread worldwide, prompting the WHO to declare a public health emergency of international concern in late January 2020 and characterize it as a pandemic in March 2020. As of August 10, 2020 there have been over 20 million COVID-19 cases globally. The current COVID-19 pandemic has had a pervasive effect on society, including an unprecedented toll on health, the economy, science, research and education worldwide.

COVID-19 will be remembered as the virus that stopped the world. We are living through a period that can only be described as the greatest act of solidarity in history, as people give up civic freedoms to save lives. While we all agree that managing the health crisis is the overwhelming priority, the social and economic consequences are, and will be, dramatic in an already troubled world.

On 19<sup>th</sup> June 2020, the ICES delegates for Ireland sent an e-mail to the ICES leadership outlining their thoughts and experiences in relation to the COVID-19 situation in Ireland and on working with the ICES community. Ireland committed to developing a discussion document for Council to contribute to the ongoing impact of COVID-19 debate at ICES. The intent of this document is to provide some food for thought on how ICES might respond to the opportunities and challenges presented by the COVID 19 pandemic.

### **Food for Thought – Box 1 – On Researchers**

COVID-19 has not affected all scientists equally. A survey of principal investigators indicates that female scientists, those in the ‘bench sciences’ and, especially, scientists with young children experienced a substantial decline in time devoted to research. This could have important short- and longer-term effects on their careers, which institution leaders and funders need to address carefully.

## 2. Remote Working - the Ireland Experience

In Ireland, as in most other countries, the COVID-19 crisis catapulted hundreds of thousands of employees and their employers into a work pattern and routine vastly different to their normal daily work experience. This radical change happened suddenly and for the vast majority the change effectively occurred overnight. While some employees have experience of remote working, many find themselves working remotely having had little time to plan, negotiate, organise and set-up remote working in conjunction with their employer and manager.

A national survey was carried out in Ireland to gather data on employees' experiences of remote working in these unprecedented COVID 19 times. It should be emphasised here that this survey do not cover the "international dimension" to remote working (e.g. language barriers).

The survey gathered empirical evidence and data to address the following questions:

1. How are employees adjusting to remote working, what is going well and what changes would employees suggest?
2. How is remote working impacting employee productivity?
3. What are employees remote working preferences post-COVID-19?
4. What lessons can be learned about remote working that could be retained/sustained post-COVID-19?

The data were collected from employees across a wide range of industries and sectors (not just scientific) over a one-week period from 27 April to 5 May 2020. A total of 7,241 responses were received.

The results of this survey while broad in nature, in general reflect the attitudes and experiences of Marine Institute scientific staff to remote working.

Some key findings of the report include;

- Just over half of respondents (51%) never worked remotely before the COVID-19 crisis. **Of these workers, more than three-quarters (78%) would like to continue to work remotely after the crisis is over.**
- Nearly half of respondents (48%) report that it is easy or somewhat easy to work effectively these days. 37% indicate that it is somewhat difficult or difficult to work effectively these days.
- The top three challenges of working remotely at present are: 1. not being able to switch off from work **2. collaboration and**

**communication with colleagues and co-workers is harder 3. poor physical workspace.**

- The top three advantages of working remotely at present are: **1. no traffic and no commute 2. reduced costs of going to work and commuting 3. greater flexibility as to how to manage the working day.**
- The majority (87%) of respondents report they have the equipment they need to work from home. However, the provision of better ergonomic equipment is one of the key changes suggested by employees to help with their well-being and productivity. Many also report the need for more suitable workspace within their home.

There are more detailed breakdown of the findings presented in the report covers a wide range of industries and sectors.

#### **RECOMMENDATION 1**

**ICES needs to prepare for a new working norm and consider a post COVID-19 situation in which many scientists from Member Countries may have a very different work pattern (e.g. working from home; remote meetings). This will raise a series of issues for the current way of doing business and may impact the current science and advisory process.**

**Preparing for the new working norm should include a focus on training for participants (particularly the chairs) in “remote working methods and approaches” that address the nature and objectives of the different types of ICS meetings meeting.**



### **3. Ireland and ICES Meetings – Some 2020 experience amalgamated from individuals**

The experience with remote meetings is very mixed. A lot depends on what the meeting is trying to achieve. Meetings with task oriented ToR's, and a small workload were more efficient, because they reflect the reduced attention span with virtual meetings. So reducing the ToR's at meetings as a blunt approach helps.

Limiting sessions to no more than 2-3 hour durations also worked well. On the negative side teams working on separate ToR's did not interact well in the online environment.

For strategic groups, which depend on open and free flowing discussion, remote meetings were more difficult and less productive.

We should probably learn from other experiences outside ICES on how web based meetings can be restructured and not assume we can convert one format directly to the other (e.g. <https://www.pmi.org/learning/library/successful-virtual-meetings-skills-improvement-6267>).

A general observation is that it is much more difficult for a new participant to get engaged with remote meetings because relationship building is much more difficult. Traditionally much of the discussions happen over coffee, on the roof terrace, and out to dinner.

Presentations on line are also challenging because engagement with the audience is more difficult.

Ireland's experience indicates that assessment groups may function better remotely than more research oriented meetings. Whether this is true across the entire ICES community should be investigated.

On the plus side, it is easier for people to attend remote meetings.

More detailed comments on the "2020 ICES experience from Ireland" have been circulated to ACOM and SCICOM by Irish scientists working with the ICES community.

**Food For Thought – Box 2 – On Early Career Scientists (ECS)**

The current COVID-19 pandemic has had a pervasive effect, including an unprecedented toll on health, the economy, science and education worldwide. Whether in person or virtual, scientific meetings have always been a tenuous balance between presentations by established leaders in the field and opportunities for ECSs to make their mark. We need to acutely and permanently change this balance and increase opportunities for young scientists to give invited and selected talks at meetings with a commensurate reduction in presentations by senior researchers. This will result in increased diversity and exposure for investigators looking to secure their next training position, their first grant or promotion.

**4. Impact of COVID 19 on ICES advisory work**

The following section gives some Marine Institutes perspectives on data collection, assessment and advice from 2020. Key points are presented with associated statistics and questions are raised for ICES consideration.

**Data Collection**

Sampling was impacted most significantly by the suspension of the at sea observer programme. In terms of cost, the sampling programme was run at a saving of 57% over the period March-August 2020 compared to the same period in 2019. The suspension of the at sea observer programme was mitigated in part by instigating a vessel self-sampling scheme. Although the self-sampling programme had to be funded, the cost of this was only 6% of the total cost of sending commercial samplers or the FATS (Fisheries Assessment Technicians) to sea on commercial fishing vessels

The commercial observer's costs decreased by 87% and the suspension of MI staff on commercial vessels caused a 100% decrease in the FATS at sea allowance costs. There was a 47% decrease in T&S (Travel and Subsistence) associated with sampling, but the cost of fish purchases for sampling increased by 21%.

In terms of sampling effort, the total number of sampling events was down by 14% when the period March to August is compared with the same period in 2019. In addition, the proportion of sampling events undertaken by a single person almost doubled from 43% to 70%. We need to determine the

impacts of this from an H&S perspective and from an outputs perspective (see questions raised below).

The survey programme was also impacted by COVID-19. This was primarily through the cancellation of surveys by partners which decreased MI effort on foreign survey vessels, and also caused the cancellation of one MI survey which was part of an international programme.

When exceptional surveys are removed from the comparison (mackerel egg surveys in 2019), the total effort on surveys undertaken on the Irish research vessel fleet was down by 40% (in terms of scientist days it decreased by 49%). Thus surveys were impacted through curtailment, cancellation and reduced participation by scientists. The impact by year end will be a smaller percentage in terms of RV days as we have no further cancellations scheduled.

## **RECOMMENDATION 2**

**The full impact of curtailed sampling in 2020 will not be apparent until 2021 assessments. ICES should plan to produce (in 2021 following the advice cycle) a synoptic analysis of the impact of reduced sampling on both the assessments and the advice, following up with clients to determine its impact on the satisfaction of advice users. Council should be aware of and support ACOMS plans that address this issue.**

## **Assessments and Advice**

In sharp contrast to the impact of Covid-19 on the sampling and survey programme, the outputs from the assessment and advice programme were less impacted.

After lockdown all ICES meetings for assessments and advice generation were conducted remotely. There was an agreement by ACOM to simplify the advice in order to facilitate the remote process, this was known as reduced format advice. This had a significant impact on the Marine Institute travel costs and carbon footprint associated with assessment & advice work which was reduced by 99% and 100% respectively.

In relation to advice outputs, reduced format advice was delivered for 34 stocks over March-August 2020, which is exactly the number of single stock advices delivered in the same period in 2019. The number of technical services and special requests actually increased from 5 to 7 between March–August 2019 and the same period in 2020.

### Some Key Questions

- (1) What is the impact of the modified sampling programme on the quantity and quality of the assessment input data? We will likely find this out only from the 2021 assessment programme, but the most likely impacts here will be from the collapse in sampling and surveys in some countries, that will create gaps and holes in the data which may deteriorate the quality of the assessments.
- (2) What is the impact of the “reduced format” advice on the clients? We should track this closely and make a big effort to follow up with a credible metric of impact.
- (3) If the answer to those 2 questions is no “major negative affect” then the adaptations to our work brought about by Covid-19 has at least some positive implications in terms of cost and our carbon footprint, and these represent efficiencies which should not be lost in the post COVID era.

ACOM perspectives and feedback on this area will be a key input to the Council debate. It would also be useful to have any initial perspectives from the Regional Co-ordination Groups (RCG's), the MIRIA (meeting between ICES and the Recipients of ICES Advice) and from ICES bilateral meetings with clients.

### **RECOMMENDATION 3**

**ICES should use the network experiences from 2020 as an opportunity to continue the discussion on “simplification/frequency of advice” and “benefits/downsides of remote assessment groups” and the “long term sustainability of the advisory process”. Council should be aware of and support ACOMS plans that address this issue.**

## 5. Impact of Covid 19 on Science Conferences – Some Thoughts

Since the coronavirus spread worldwide in early March, many scientific conferences scheduled for 2020 have either migrated online, have been cancelled or rescheduled to 2021. The 2020 ICES Annual Science Conference (ASC) was cancelled. Many hope that the pandemic will finally push scientific organisations to embrace a shift towards online conferences — a move that many scientists have long desired for environmental reasons and to allow broader participation.

The economics of online meetings are different from those of conventional ones. In the US, it is estimated that virtual meeting can cost only about 45% of the equivalent in-person conference. The American Astronomical Society hosted its online-only meeting in June 2020, and the cost to attend is around 60% cheaper than it was for its January 2020 meeting.

### Food for Thought – Box 3 – On Scientific Conferences

*As the coronavirus pandemic spreads around the world, leading to unprecedented measures to stop the virus's spread, the number of scientific conferences being cancelled is rising and researchers are scrambling to find alternative ways to share their work and interact with collaborators. Some of these discussions are even pushing researchers to rethink the concept of meetings entirely. "At some point, we need to be having conversations about what is the point of a conference now? Although cultural changes happen slowly in the scientific world, I'm hoping this will at least force some real conversation".*

The shift to online meetings could shrink one of the major revenue streams for organisations/societies, some of which draw a large fraction of their operating budget from their annual meeting. Furthermore, if organisations/societies move to hold a dual online and in-person meeting, that could drive up costs because the meeting would require more staff, and both a venue and an online platform.

Researchers who have attended virtual meetings say that the meetings have several important downsides. Poster presentations can fall flat in an online space, and it's difficult to have serendipitous

encounters between sessions, which is where a lot of collaboration normally happens.

Unofficial chats during conferences are the most important way that scientists share knowledge with each other.

Now that the idea of a virtual meeting is less abstract, people might be more willing to open up conferences, meetings and seminars to remote participation.

Many believe there will be some remnants of this that resonate on for many years.

#### **Food for Thought – Box 4 – On Scientific Conferences**

All these factors mean there's a "large appetite" for alternative conference set-ups, University College London (UCL) will hold an experimental virtual conference, that aims to improve accessibility, cut down on researchers' carbon footprints and reach a wider audience than a conventional meeting could. Participants will watch recorded talks ahead of time and then join in online conversations on the day of the conference.

#### **RECOMMENDATION 4**

**ICES should use the ASC 2021 to explore a new model for the ASC and ask the question "What is the point of the ASC now?". The use of a blend of Webinar/Remote/Physical meeting could bring enormous benefit to the ICES community and establish a new model for the ASC. If there is a decision to have the 2021 meeting at least partially remote, we should seek external expertise in helping us make the transition so that the conference is as successful as it can be. Council should be aware of and support SCICOM plans that address this issue.**

## **6. A reduced Carbon Footprint – but not significant in terms of global footprint**

Before the COVID-19 pandemic of 2020, emissions of carbon dioxide were rising by about 1% per year over the previous decade, with no growth in 2019. Renewable energy production was expanding rapidly amid plummeting prices, but much of the renewable energy was being deployed alongside fossil energy and did not replace it, while emissions from surface transport continued to rise.

In the US, estimates of the carbon cost of conferences vary, but range from 0.5 to 2 or more tonnes of carbon dioxide per participant in travel alone. If each of the estimated 7.8 million researchers in the world travelled to one conference every year, the lower bound of the annual carbon emissions would be roughly equivalent to those of some small nations. Air travel for participation in the ICES network is part of this carbon footprint.

Government policies during the COVID-19 pandemic have drastically altered patterns of energy demand around the world. Many international borders were closed and populations were confined to their homes, which reduced transport and changed consumption patterns. The decrease in CO<sub>2</sub> emissions during forced confinements. Daily global CO<sub>2</sub> emissions decreased by –17% (–11 to –25% for  $\pm 1\sigma$ ) by early April 2020 compared with the mean 2019 levels, just under half from changes in surface transport.

At their peak, emissions in individual countries decreased by –26% on average. The impact on 2020 annual emissions depends on the duration of the confinement, with a low estimate of –4% (–2 to –7%) if prepandemic conditions return by mid-June, and a high estimate of –7% (–3 to –13%) if some restrictions remain worldwide until the end of 2020. Government actions and economic incentives post crisis will likely influence the global CO<sub>2</sub> emissions path for decades.

### **Food for Thought – Box 5 – On Emissions**

COVID-19 measures around the world caused disruption and posed significant burdens on our economies. However, the flip side of the coin is that these measures also positively impacted our environment, by reducing the emissions of carbon dioxide (CO<sub>2</sub>) and other pollutants - such as sulphur dioxide (SO<sub>2</sub>) and nitrogen oxides (NO<sub>x</sub>) – from numerous sectors, such as transport, energy and aviation. Reduced pollutant emissions result from, for instance, lower demand for services, closing of large buildings such as offices and schools, and a reduction of industrial activity. These events are in no way an achievement to aim for. However, the situation that arose is worth analysing to determine what we could learn from it, for when things go back to some degree of normality.

The estimated decrease in daily fossil CO<sub>2</sub> emissions from the severe and forced confinement of world populations of –17% (–11 to –25%) at its peak are extreme and probably unseen before. Still, these only correspond to the level of emissions in 2006. The associated annual decrease will be much lower (–4.2 to –7.5% according to our sensitivity tests), which is comparable to the rates of decrease needed year-on-year over the next decades to limit climate change to a 1.5 °C warming. These numbers put in perspective both the large growth in global emissions observed over the past 14 years and the size of the challenge we have to limit climate change in line with the Paris Climate Agreement.

Furthermore, most changes observed in 2020 are likely to be temporary as they do not reflect structural changes in the economic, transport or energy systems. The social trauma of confinement and associated changes could alter the future trajectory in unpredictable ways but social responses alone, as shown here, would not drive the deep and sustained reductions needed to reach net-zero emissions.

The extent to which world leaders consider the net-zero emissions targets and the imperatives of climate change when planning their economic responses to COVID-19 is likely to influence the pathway of CO<sub>2</sub> emissions for decades to come.

In Ireland we introduced travel restrictions in February and the Marine Institute introduced a complete ban on international travel for business meetings by early March. As participation in international meetings is feasible through remote means, International work travel is still prohibited at the Marine Institute and this may remain the case for the remainder of 2020, and into 2021 unless government guidelines change.

In 2019 the Fisheries and Ecosystem Advisory services section of the Marine Institute which engages in ACOM and fisheries and ecosystem expert groups, produced an average carbon footprint from International travel of 915 kg per person travelling. To put this in perspective the global average for people who fly is 545 kg total CO<sub>2</sub> footprint from all their flights, both work and leisure.

Thus the consequences of ICES participation is that Irish scientists have 1.6 times the average CO<sub>2</sub> footprint for people who fly for work and leisure. The change in travel for work brought about by the Covid-19 pandemic has made a significant reduction to our organisations carbon footprint.



The reduction in Ireland's carbon footprint in relation to the ICES advisory/science process is noted. ICES Bureau are considering this issue across the ICES community and this discussion document makes no recommendations in relation to the carbon footprint issue.

## **7. Discussion**

This discussion draws on the SWOT analysis presented in Annex 1.

The COVID-19 pandemic will give ICES the opportunity to pause and examine the current systems and processes it has in place and to ask the question “are they fit for purpose in the new post Covid-19 world of work “.

There is a need to explore new ways of working for the ICES network that are aligned with a new way of thinking about work in society, particularly in relation to reduced appetite for travel, increased demand to address human wellbeing and the benefits of remote working.

Remote working also presents some issues for ICES. The loss of the “informal face to face cup of coffee chat” has removed a key networking device for the ICES community.

There is less new blood coming into the system which causes a reliance on the “old guard”. There is a danger that the focus of ICES discussion and thinking is on operational matters with less time and focus on strategic issues.

The reduced networking activity within ICES also reduced “sensing the mood” of the ICES community, scientists, managers, policy makers and partner organisations.

COVID-19 presents ICES with some strategic opportunities. Key is a review of the way it does business and to explore new working norms. A change agenda to reflect the broader changes in society and the needs of clients is a great opportunity.

One of the greatest threats to ICES is to adopt the mindset of a return to business as usual. ICES needs to plan for the change that is coming. There will be an economic downturn over the next 3 years and there is great uncertainty on what the post COVID-19 era will look like for the international scientific community.

We need to measure the real impact of the “reduced advice” format from the users of the advice, and if this is not significant, then we need to respond to that information in a way that enhances participation in our network, and facilitates ICES to grow in a way that reflects the basis of its expertise: i.e. intergovernmental science based organisation.

## **8. Some Recommendations to Council**

While a global pandemic has been a looming risk for decades, COVID-19 has come as a shock to society, health systems, economies, governments, leaders and decision makers worldwide. In the midst of extraordinary challenges and uncertainty, and countless personal tragedies, leaders are

under pressure to make decisions on managing the immediate impact of the pandemic and its future consequences. These decisions will shape the state of the world and the format of work many years to come.

The ICES Strategic Plan highlights how it's success has been achieved by people from diverse national and disciplinary backgrounds working together to accomplish shared goals. The Strategy sets out to strengthen these collaborations and introduce new disciplines and perspectives to science and advice.

COVID-19 has catalysed a deep discussion in society on the future of work and has focused attention on the quality of life, wellbeing, working from home, the benefits of remote meetings, reducing travel, reducing climate impacts of travel, and the enormous savings that have been made in travel budgets. COVID-19 is a unique phenomenon in that it has impacted all of the ICES community across the globe, albeit to different levels of severity. The post COVID-19 landscape will change the way most organisations accomplish their goals and will certainly introduce new perspectives to ICES on the way its community of scientists will need to work and interact.

This discussion document presents 4 broad recommendations to the ICES Council that will consider the immediate and longer term impacts of COVID-19 on ICES work and will hopefully help prime a discussion on the shape and future format of the way ICES operates.

#### **RECOMMENDATION 1**

**ICES needs to prepare for a new working norm and consider a post COVID-19 situation in which many scientists from Member Countries may have a very different work pattern (e.g. working from home; remote meetings). This will raise a series of issues for the current way of doing business and may impact the current science and advisory process.**

**Preparing for the new working norm should include a focus on training for participants (particularly the chairs) in “remote working methods and approaches” that address the nature and objectives of the different types of ICS meetings meeting.**

#### **RECOMMENDATION 2**

**The full impact of curtailed sampling in 2020 will not be apparent until 2021 assessments. ICES should plan to produce (in 2021 following the advice cycle) a synoptic analysis of the impact of reduced sampling on both the assessments and the advice, following up with clients to determine its impact on the satisfaction of advice users. Council should be aware of and support ACOMS plans that address this issue.**

#### **RECOMMENDATION 3**

**ICES should use the network experiences from 2020 as an opportunity to continue the discussion on “simplification/frequency of advice” and “benefits/downsides of remote assessment groups” and the “long term sustainability of the advisory process”. Council should be aware of and support ACOMS plans that address this issue.**

#### **RECOMMENDATION 4**

**ICES should use the ASC 2021 to explore a new model for the ASC and ask the question “What is the point of the ASC now?”. The use of a blend of Webinar/Remote/Physical meeting could bring enormous benefit to the ICES community and establish a new model for the ASC. If there is a decision to have the 2021 meeting at least partially remote, we should seek external expertise in helping us make the transition so that the conference is as successful as it can be. Council should be aware of and support SCICOM plans that address this issue.**

## Annex 1 - A SWOT Analysis on the Impact of the Covid-19 Pandemic on the ICES community and its way of working

<p style="text-align: center;"><b>STRENGTHS</b></p> <ul style="list-style-type: none"> <li>• Ask fundamental questions of the current system</li> <li>• Explore New Ways of Working <ul style="list-style-type: none"> <li>• Savings on Travel Time <ul style="list-style-type: none"> <li>• Budget Savings</li> </ul> </li> </ul> </li> <li>• Increase in Staff Home Quality Time <ul style="list-style-type: none"> <li>• More Efficient/Effective Meetings</li> </ul> </li> <li>• Greater Office – Home Mix of working as new norm. <ul style="list-style-type: none"> <li>• Microsoft Teams</li> </ul> </li> <li>• Remote Working as a new Norm.</li> <li>• Reduced Carbon Footprint of science and advice. <ul style="list-style-type: none"> <li>• Review of Survey staffing. <ul style="list-style-type: none"> <li>• Adaption to COVID</li> <li>• Space for Thinking</li> <li>• Space for Training</li> </ul> </li> <li>• Focus on staff well being</li> </ul> </li> <li>• The debate within society on the future of work</li> </ul>	<p style="text-align: center;"><b>WEAKNESSES</b></p> <ul style="list-style-type: none"> <li>• The loss of the informal “Cup of Coffee Chat”</li> <li>• Impact on Normal Networking <ul style="list-style-type: none"> <li>• Negative Impacts on Data Collection.</li> </ul> </li> <li>• Impact on ASC Conference and other international meetings</li> <li>• Loss of Thinking Time during travel time</li> <li>• Underutilisation of Meeting Room and office Facilities. <ul style="list-style-type: none"> <li>• No COVID Testing.</li> </ul> </li> <li>• Less New Blood into the system (reliance on the same old guard).</li> <li>• Less Strategic Discussion – Focus has been on Operational Issues.</li> <li>• Reduced “Sensing the Mood of the Network” – ICES, Member States - Scientists, Partner Organisations.</li> <li>• General COVID Uncertainty <ul style="list-style-type: none"> <li>• Training a lower priority</li> </ul> </li> </ul>
<p style="text-align: center;"><b>OPPORTUNITIES</b></p> <ul style="list-style-type: none"> <li>• Review the way we do business create new norms new model new business plan.</li> <li>• Review established and rigid working norms (because we have always done it this way syndrome)</li> <li>• Change Agenda – create a new working paradigm.</li> <li>• More efficient use of resources (people and money). <ul style="list-style-type: none"> <li>• Review of Survey Staffing.</li> </ul> </li> <li>• Need for Less frequent advice.</li> <li>• Create a new Conference model</li> <li>• New Economic Model – New Opportunities</li> </ul>	<p style="text-align: center;"><b>THREATS</b></p> <ul style="list-style-type: none"> <li>• Reluctance to return to business as usual when the Pandemic is over.</li> <li>• Business as usual mentality. <ul style="list-style-type: none"> <li>• The future of Science Conferences.</li> <li>• The future International Meetings.</li> </ul> </li> <li>• Redundant Office Space and Meeting Rooms.</li> <li>• Uncertainty over COVID-19 impacts on 2021 and 2022 <ul style="list-style-type: none"> <li>• The Economic Downturn</li> </ul> </li> <li>• Human Health and Wellbeing</li> </ul>

## REFERENCES

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## **ICES COVID- 19 Response – future preparations and planning**

This document outlines the experience gained by ACOM, SCICOM and the Secretariat during the COVID-19 pandemic, from operating through remote meetings the last eight (8) months. The document lists the needs identified if remote meetings are to continue up to 31 January 2021, and even beyond, including IT equipment, training, and additional human resources. It is important to state that issues such as language, gender, and culture are among factors influencing the effectiveness of remote meetings, and which are difficult to measure. These factors are important to consider in international science cooperation, and to explore tools available to help improve communication.

Based on the experience gained the following documents are in development:

- Guidance for chairs of expert groups transitioning to online meetings during the COVID-19 pandemic (in preparation)
- an outline document on hybrid meetings (a mixture of online and in-room attendees), currently being commented on by SCICOM. Once finalized the document will serve as the basis for defining needs (IT, online resources and training), for which the 2019 Council meeting put aside a limited amount of equity funding. However, it is clear that a longer-term investment would be required to implement, sustain, and to ensure training and tools are accessible to the entire community.

Council is invited to consider this information when discussing the [Irish Discussion Document to ICES Council 2020](#), and the remote meeting strategy of the organization.

### **Short-term considerations**

On 9 August 2020 the President, First-Vice President, ACOM and SCICOM chairs, as well as the General Secretary communicated the following:

- groups will continue to operate through online meetings up to 31 January 2021.
- this decision will be evaluated in November, and only be adjusted if the situation of the pandemic, quarantine rules, and travel restrictions have changed substantially.
- this will impact WGCHAIRS and a shortened online meeting(s) will occur in January, with a physical meeting of WGCHAIRS being held later in 2021 when appropriate.

## Longer-term considerations

### Experience from meetings

**Focusing on operational delivery and not strategic issues.** While ACOM has still fully engaged in the delivery of advice, there has been an increasing silence on the forum for strategic development and tactical decision-making. Likewise, it has been difficult within SCICOM to have longer, in-depth discussions and foster innovation. And in some cases, this has been amplified with curtails on especially fieldwork and to some extent laboratory work. This makes the delivery of the science and advisory plans more challenging.

**Decision-making is being enacted by a smaller pool of individuals.** ACOM has been less active on the forum, resulting in the centralised members of ACOM (i.e. ACOM leadership) having an increased influence on the direction, and a corresponding reduction in influence of ACOM members (i.e. the network and member countries). There has been a similar reduction of activity on the SCICOM Forum, with less engagement from SCICOM members.

**Sensing the mood of the network.** The inability to informally chat, has resulted in an inability to read the mood of the network and science community. This is true for both ICES meetings and those outside the network, such as Advisory Councils and Regional Fisheries Management Organizations meetings. This has large implications in terms of

- inter-organisational relationships,
- preparing for ICES meetings and decisions,
- listening to feedback from stakeholders and requesters of advice,
- hearing of innovations and developments relevant to ICES advice.

**Invitations to external experts.** It is becoming difficult to attract experts to act as reviewers, especially for benchmarks. We must recognise that participation is not totally driven through altruism. The added enticement of a trip to Copenhagen to engage with ICES is a strong motivation for those outside the ICES community. For many the prospect of multi-day remote meetings is not as positive as face-to-face meetings in Copenhagen.

**Diversity and nurturing talent, including supporting Early Career Scientists.** The ACOM leadership and the ICES secretariat is reverting to “the regulars” when reaching out for experts and potential Chairs of new expert groups. The lack of face-to-face contact thus reduces the diversity of the expert pool, tends to favour male experts and reduces the opportunity for new experts to take leadership roles in ICES. There is a reduced equity of access to ICES organisational structures. There is a huge difference in the confidence required from an early career expert to have a brief coffee chat, compared to picking up the phone to cold call ACOM leadership. The current situation is particularly stressful for young families and Early Career scientists. In addition to the challenges related with balancing personal life and work, also the lack of opportunities to present work at conferences and to grow personal networks is challenging.

**Discrimination caused by operating across time zones.** To some extent there has been an expectation that individuals are available beyond the standard work hours, their working week will be longer. This was accepted at the beginning of

the disruption, but is beginning to create problems as it becomes a *modus operandi*. This particularly discriminates against carers and people with disabilities. There is a growing evidence base being documented online to support this observation. Individuals are reporting that they have been expected to be available during their normal work hours for their normal work, and then working additional hours at antisocial times for ICES.

ACOM will discuss the provision and format of advice during their September meeting. The challenges caused by the pandemic has provided both opportunities for improvement and reductions in quality of the advice. These issues will be considered and the decision made before the end of 2020.

### **Guidance for on-line meetings**

The document in preparation by the ICES Coordination Group will provide simple and clear guidance for how to best prepare and conduct on-line meetings. The guidance is based on cumulative experience from on-line meetings, as well as known best practices identified by the ICES Community and Secretariat.

### **Resources: Training and Capacity Building**

On a general note, the rapid uptake of online tools coupled with the increasing updates/changes to these tools, has created pressure on the Secretariat and Community to follow the development. The rate of change will not slow significantly, and therefore the style and frequency of training to support the user base will need to be considered.

A sub-group of the coordination group met in August to discuss the specific challenges on running/participating in hybrid meetings (some participants online, some participants sitting together in person). The tenet agreed by the group is:

“Remote participants should have the same ability to contribute/interact as those present in the room”

In brief, the group discussed the challenges of hybrid meetings, the specific needs for ICES meeting/group types, the audience for the training and the timing of that training. The group identified that a number of meeting types would need enhanced attention/training:

- ADG's (building consistency and formulating narrative; monitoring who is in, and who is active in the conversation)
- Benchmarks (innovation and consensus)
- EG's using breakout groups
- Symposia (unstructured interaction and social aspects)
- Training groups (for combinations of above issues)

Expert Group chairs were deemed to be the first priority for training, as well as symposia chairs and training course convenors. A 2<sup>nd</sup> priority would be Committee and SG chairs, ACOM/SCICOM leadership and the Secretariat. It was clear that this training needs to be available all the time (when needed), and reusable.

The aim is to use this information as a briefing to then contact external companies/consultants to deliver online training webinar(s) for ICES. There is a small budget that was allotted under the 2019 strategic investment by Council that can support this, however it is clear a longer-term investment would be required



to both sustain this, and to ensure training and tools are accessible to the entire community.

SCICOM is currently commenting on the document on hybrid meetings. ACOM cannot form a consensus on hybrid meetings at the moment, as many divergent views have been stated. ACOM will return to the issue in December or January.

### **Resources: Human, financial and infrastructure**

Given the need to run meetings across time zones, there could be an additional burden on all parts of the community, but especially those with caring responsibilities (often women). This could require additional resources for carrying out the same work remotely.

The shift to entirely online processes and administration has also put additional pressure on Secretariat staff. Additional meetings, meetings across time zones, and facilitating and administering all ICES work entirely online requires additional time and resources. Overtime compensation will be required for supporting staff working outside core working hours if meetings across time zones continues in the long-term.

For IT, we have been working towards a 4-5 year plan to move more services and infrastructure into the Cloud. There are clear benefits to working through the Cloud – less dependency on in-house hardware, more resilience to software upgrades, seamless changes to infrastructure, 24/7 availability of services and better integration within and between federated organisations. The timeline has been quite conservative for two reasons; the move of some services i.e. Sharepoint are in themselves a grand challenge as they are so embedded in the way we work and need revising for full Cloud integration. Secondly, the cost of moving to the Cloud is still uncertain/variable in regards to our storage and user licence needs – which is at odds with the way that we plan budgets over a 2-3 year timeframe in ICES. These considerations have been in focus in COVID-19, and we are now seeing an accelerated move to the Cloud environment, which also implies more acute and variable demands on the IT/ICES budget, and on human resources to implement these changes.

## ICES Net Zero Initiative

(updated by Bill Karp, September 14, 2020)

ICES recognizes the need and the importance of adapting our business model so that we can continue to support our network, nurture marine science, and provide evidence-based advice to policymakers. While our organizational CO<sub>2</sub> footprint is small, current operations are highly dependent on international travel by scientists and others within our network and our own staff and we will take actions necessary to maintain and enhance our functionality, creativity and responsiveness to clients while reducing travel to the extent possible. This is necessary to demonstrate our leadership and commitment to addressing climate change concerns while also recognizing that substantive reduction in travel is likely to occur across the network as nations and institutions constrain travel to address emission-reduction goals as well as economic and other priorities. Much of the effort associated with this initiative will involve building on our existing experience in hosting and supporting virtual/remote meetings and developing additional capacity in this arena.

In 2019, ICES began planning organizational transitions which must occur as global demands to target and achieve substantive emissions reductions. This was stimulated by growing concerns within the network and articulated in correspondence from Bill Turrell whose *Quo Vadimus* article<sup>1</sup> in IJMS (Turrell 2019) constitutes a call for action to ICES and the marine science community. Several ICES member countries have already enacted policies designed to substantively reduce CO<sub>2</sub> emissions in the coming years and we expect similar actions to be taken by many others.

As we reconfigure our own operations to meet this existential need, we recognize that we have a larger role to play in the overarching challenge to reduce emissions from burning fossil fuels. Our success as an organization is based on our ability to engage scientists across a broad spectrum of marine disciplines and within our expert groups (EGs) we can readily identify ongoing and newly emerging activities which focus on various aspects of this challenge. These include characterization and reduction of emissions associated with fishing, fish processing and aquaculture; characterization and reduction of emissions associated with data collection and monitoring (especially seagoing operations); and provision of advice to policymakers regarding emissions associated with alternative fishing strategies. This will also include expert working groups working on concepts for integration of mitigation technologies, such as marine renewables, with other uses

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<sup>1</sup> <https://doi.org/10.1093/icesjms/fsz164>

of marine space and resources. These are, by definition, rather broad topics. Progress in specific areas will be elaborated as we develop this agenda.

While we develop and implement a policy for ICES, we are faced with an imminent global crisis in the form of the Covid-19 pandemic. This has disrupted normal activities and operations within all our member countries and suspended all travel associated with ICES work for a period of at least several months. Impacts and changes in operations associated with the pandemic will likely continue for some time.

The ICES network and Secretariat has responded to this crisis in a remarkably positive and constructive manner which has made it possible for the advisory process and much of the administrative and scientific engagement and productivity to be maintained. This has been accomplished by the commitment of many dedicated individuals and through greatly increased use of virtual/remote meeting resources. For many of us who may have been cautious about committing to the organizational changes necessary to support a transition to net-zero, this crisis and our collective response has demonstrated that we are, indeed, capable of responding to this broader challenge. And we can now draw from lessons learned within our network and Secretariat during the Covid-19 pandemic as we move forward.

## **ICES Policy/Position Regarding Net-Zero Emissions**

**(As revised by Bureau, June/Sep 2020)**

ICES acknowledges and supports actions taken by member countries to substantively reduce emissions and will take actions necessary to move towards net-zero status for operations and activities managed directly by the Secretariat and carried out during meetings of ICES Expert Groups as soon as possible. These actions will be taken in full consultation with member countries and in recognition of their specific positions. ICES will also encourage and support activities within our network which develop and integrate the science necessary to provide advice on reducing emissions associated with fishing and fish processing operations, aquaculture, research, monitoring, and ecosystem-based fisheries management, and integration of mitigation technologies, such as marine renewables, with other uses of marine space and resources. ICES considers this initiative to be of the highest priority and will make every effort to meet this goal, and engage the community in identifying, developing, and implementing the changes required.

## **Draft Terms of Reference for Bureau Working Group**

1. Develop a strategy for estimating and publishing the ICES community baseline at an appropriate level of resolution
  - a) Begin with a working definition of the “ICES Community” as “activities that are organized directly by ICES operations and activities managed directly by the Secretariat and carried out during meetings of ICES Expert Groups” and refine this as appropriate
  - b) Consider alternative approaches for defining baseline (e.g. inventory of historic meetings and participation, more comprehensive approaches to quantify CO<sub>2</sub> footprint, etc.)
  - c) Investigate the possibility of using an existing guide/framework such as the one available from the Carbon Trust (depending on outcome of b, above) – (may not be necessary)
2. Inventory, document and evaluate steps already taken to justify travel, facilitate remote meetings, etc. in recent years and, in particular, during the Covid-19 pandemic with careful examination of benefits (such as broader participation) and costs (such reduced social and informal interaction). Make the greatest possible use of lessons learned in developing this strategy (develop best practice guides; collaborate with other organizations, etc.)
3. Survey member countries and other organizations to determine if they have:
  - a) Developed targets and strategies for short- and long-term reduction of their CO<sub>2</sub> footprints or otherwise restricted travel and/or other sources of emissions
  - b) Conducted CO<sub>2</sub> footprint audits or established baselines in other ways
  - c) Inventory details related to a and b above and update regularly
4. Draft a CO<sub>2</sub> footprint reduction strategy for ICES which achieves net-zero status as soon as possible and:
  - a) Sets short-and long-term targets
  - b) Establishes overall CO<sub>2</sub> budget reduction trajectories for different parts of the organization
  - c) Seeks input from throughout the organization (top-down and bottom-up) and is responsive to relevant activities in Member Countries
  - d) Encourages and resources innovations that reduce ICES related travel, improve remote meeting capabilities, develop and advance remote networking, etc.

## **Terms of Reference for Forwarded to SCICOM by Bureau (June 2020)**

5. Together with other relevant organizations, consider approaches for auditing and reducing emissions associated with:
  - a) research and monitoring, including use of research vessels and alternative platforms
  - b) fishing, aquaculture and fish processing operations
  - c) CO<sub>2</sub> offsets (e.g. mitigation, offshore energy, biomass /biofuel production)
  - d) additional science focus areas?
6. Emphasize net-zero thinking in everything we do and miss no opportunity to advance on this goal (e.g. upcoming relocation of Secretariat, planning for future ASCs) (Standard TORs for EGs?)
7. Work with partner organizations such as PICES and OSPAR, to develop joint policies and procedures and take a leadership role in CO<sub>2</sub> reduction strategy development and implementation

**Process**

This strategy will be developed through a Bureau Initiative/Bureau Working Group. A small internal working group will be established to develop an implementation plan and schedule and to guide the process. This will consist of two individuals from each of Bureau, Secretariat, SCICOM and ACOM and will include staff support from the Secretariat. The process will be designed to encourage and endorse bottom-up participation.

## Finance Report

This document presents the outcome of the Finance Committee, has been elaborated together with the Chair of the Finance Committee, and updated based on information as of July 2020 and projecting costs for the remaining part of the year, taking into account the financial implications of the ICES response to the COVID-19 pandemic. The document has been considered by Bureau, at its meetings in May and September.

The report summarises the main trends and uncertainties for revenues, expenditures, and costing of the recurrent advisory requests. The report contains a two years' projection, based on the audited accounts for the previous year, and the estimate for the current year. Furthermore, the report contains an overview of realized and estimated revenue for recurrent advice, and an overview of on-going external projects, projects in the pipeline, and contracts.

Based on the description below, and the information contained in the attachments Council is invited to:

- approve the final accounts 2019, including Audit Book, noting that the Final Accounts for 2018 did not give rise to any qualifications or emphasis on any specific matters, cf. Attachment 4;
- approve the proposed budget for 2021, noting that the national contributions have already been decided, and a 1.7% inflation regulation agreed, cf. Attachment 1;
- approve the 2022 forecast budget, with a 1.7% inflation regulation of the national contributions, noting that Attachment 1 shows the implications on the budget without an inflation regulation of the national contributions;
- note the trends in revenue and expenditure, contained in the two-year projections, compared to the realized and audited 2019 budget, and the current 2020 budget;
- note the positive development in the trend towards 100% cost recovery of recurrent advisory requests.

*Given the 2020 Council meeting will take place remotely, the approvals will be conducted by e-voting procedure. Council Delegates will be provided with a link, to submit their approval during the course of the first meeting day (21 October).*

**This document compilation includes:**

- Finance Report
- Final Accounts 2019
- Audit book comments on final accounts 2019

## Bureau statement on the economy of the organisation

Based on the Financial Overview Report for 2020-2022, and taking into account the 2019 audited accounts, Bureau finds that:

Overall, the organization is demonstrating healthy economic development, including:

- Finalization of new agreements with advice requesters for recurrent and special requests; notably Iceland and EC/DG ENVIRONMENT.
- Evidence of a balance between costs and income indicating progress towards 100% cost recovery for recurrent advisory products.

Bureau notes that there are still on-going negotiations for a new MoU between UK and ICES, to enter into force January 2021, and that this will reflect on the negotiations and the costs in the Specific Agreement between EC/DGMARE and ICES. Furthermore, this will have to be reflected in the MoU between NEAFC and ICES, which also needs to be based on the temporary calculations of costs for providing scientific advice, using weighted number of stocks per advice requester.

The budget takes a conservative and risk averse approach, which specifically for the 2022 forecast budget means that (current) project revenue is anticipated to less than DKK 1.5 million, and to increase to approximately DKK 2.5 million, due to projects in the pipeline. With this revenue as well as an expectation for new projects and contracts, it is anticipated, despite the projected deficit, that a more balanced budget will be achieved in 2022.

Bureau specifically notes, that the organizations has managed well during the COVID-19 pandemic, and that the surplus in the current budget year 2020 is due to cessation of physical meetings and travels, cancellation of training courses, and postponement of the ASC to 2021.

If online meetings are continued throughout the coming budget years, some of the travel budget lines will be absorbed to cover costs from additional resources needed in the Secretariat to facilitate and support meetings in different time zones, as well as for additional IT infrastructure, and training for the community. It can also be expected that the cost of travel (air tickets) will increase and the limited travels will cost more. Investments from equity could also be foreseen in the coming years.

Bureau recommends that an inflation regulation of 1.7%, of the 2022 national contributions, will be decided by Council.

## Two year projections, compared to the realized and audited 2019 accounts and the 2020 estimate

Attachment 1 contains a two-year projection, 2021-2022, of revenue and expenditures, compared to the audited 2019 figures and the estimated figures for the budget year, 2020. For some figures, with high variability, efforts are made continuously during the year to get draft-realized figures, to be able to improve estimated revenue figures in the draft 2020 budget, as well as the revenue in the 2021 budget. In response to the COVID-19 situation on ICES activities, including postponement of the 2020 ASC until 2021, postponement or cancellation of training courses, and restrictions on travel, the 2020 budget estimate has been partially updated and will be monitored throughout the year. Specifically, given travel is expected to be drastically limited for the rest of 2020, the travel budget line has been adjusted to include the realized costs by the end of July, and a small buffer of an additional 10%.

It should be noted, that the figures for 2021 and 2022 have been made on the basis of the following, in some cases, conservative assumptions:

### Revenue

- The amount of the national contributions is based on a 1.7% increase in 2021 (agreed by vote), and 1.7% in 2022 (to be agreed by vote).



- Special requests and contracts (apart for those with HELCOM, OSPAR, AMAP) have been capped at a fixed level of DKK 1,500,000 which includes the framework agreement signed in 2020 with EC Directorate General for Environment. The framework agreement is in the range of DKK 4,500,000 over a period of four years, which has been evenly divided with DKK 1,125,000/year. We expect that in 2021 and 2022 the framework agreement with EC DG ENV will be fully operational. While it remains to be seen whether the maximum annual amount will be realized, we also expect that the increased number of advice requesters will enhance the number of special requests, outside the Specific Agreement with EC DG MARE.
- Only known project revenue has been included, and thus not expected revenue from projects in the pipeline, not yet approved. In 2022, the current project estimation DKK 1,310,106 is likely an underestimate with several projects in the pipeline, and a revenue of at least DKK 2,500,000 associated with these additional proposals.
- The revenue from the newest advice requesters, Iceland and UK have been included. The revenue from the expected MoU with UK is included, however the total ICES advisory revenue remains the same as it is assumed that the total cost of the specific agreement with EC DG MARE will be reduced with the amount paid by UK. It is important for ICES to make sure that all costs are covered, given both the increasing number of advice requesters, and the anticipated increased demands.
- The unknown value of future national contributions, project revenue, and special requests have cumulative importance on a balanced operating result especially in 2022.

## Trends

- The revenue from recipients of advice, including special requests is expected to be stable throughout 2020 to 2022. In 2020, EC DG MARE and ICES have agreed to consider a request for transfer of funds from the non-recurrent advice requests budget cost category to the recurrent one without exceeding the maximum budget of DKK 14,900,000. The request for payment after the first six (6) months has asked for a transfer between recurrent budget lines (from travel and meetings to personnel recurrent costs as well as IT costs). For the last request for payment, the need for a transfer from the non-recurrent to the recurrent budget will be considered.

## Uncertainties

- The two major unknowns are usually “special requests + contracts” and projects. Due to the agreement with EC DG MARE making it possible to reallocate costs from non-recurrent advice to recurrent advice, the major remaining uncertainty relates to the projects. A new EU Framework Program for Projects, Horizon Europe 2021-2027, as well as a new European Maritime and Fisheries Fund 2021-2027, all included under the Multiannual Financial Framework for 2021-2027, also contribute to the uncertainty, with the risk of gaps in-between current and future project financing. Due to the COVID-19 pandemic, a further delay in the start of projects is expected. This could benefit the project revenue and the budget balance in 2022. Attachment 3 contains an overview of on-going external projects, external projects in the pipeline, and contracts.

## Expenditures

- Salary figures are based on best knowledge of recurrent and special requests, and resources required.
- Other expenses are based on actual and estimated expenditures.

## Trends

- The increase in salaries from 2019 to 2022 is due to parental leave, inflation regulation and step-increases according to the Staff Rules, and use of equity for additional resources as decided by Council.

- The higher expenses in “Travelling and meetings” in 2022 compared to the previous years is due to funding of activities covered by equity, e.g., the regular (every five-years) Joint ICES-PICES Early Career Scientists Conference and the Council Strategic Initiative on Education.
- The IT budget remains stable, and the review of the remote meeting facilities might require investments, responding to increasing and changing demands for services from a growing community, and Secretariat. Likewise, the upcoming move of the Secretariat to new premises might require further investments. Although all requests are now channelled through the Danish authorities.

### Costing the recurrent advisory requests

Attachment 2 contains an overview of realized and estimated revenue and costs for recurrent advice, for 2016, 2017, 2018, 2019 and 2020.

### Trends

- The total revenue has steadily increased, from DKK 14,100,000 in 2016 to DKK 19,400,000 in 2020.
- The increase in direct costs, and corresponding decrease in indirect costs, are based on a marked decrease in the overhead costs from 35% to 7%, dictated by the Advisory Framework Agreement with EC DGMARE.
- The fluctuation in the total costs is due to increased tasks, staff changes, including an additional ACOM vice-chair.
- Generally, there is a positive trend towards the 100% cost recovery of costs incurred for recurrent requests.
- The surpluses in 2019 and 2020 of respectively DKK 300,000 and DKK 100,000 are unrealized gains, and mainly generated by the increased EC DG MARE contribution, which includes also a notable allocation for special requests. Revenue from special requests are mainly covering costs of external experts, per diem and travel, and thus not adding to the overall revenue of ICES. In 2019, the “surplus” was generated by the increased revenue from the costing in the renegotiated MoU with Norway, and the additional revenue from the new MoU with Iceland, both based on the “Temporary calculation of costs for providing advice”. With the incoming Head of Finance it will be important to review the itemization of costs related to the advisory services.

### Uncertainties

- New advice requesters (e.g. Iceland and UK) have required the development of a standardized costing mechanism, according to an agreed cost-sharing key between new and established advice requesters. As agreed at the 2019 Council Meeting, ICES has, awaiting other suggestions from advice requesters, used the “Temporary calculation of costs for providing advice”, for costing advice. This has required some administrative changes in the Secretariat, and ultimately an optimization and integration of ICES Enterprise Resource Planning Accounting (ERP) system, for which reason Council has agreed to use equity for the employment of a Head of Finance, taking up his position 1 October 2020.
- An overall increase in special requests is likely, given the increased number of advice requesters (UK and Iceland).

## Attachment 1

## Proposed Budget 2021 and Forecast Budget 2022

		Audited 2019	Estimate 2020	Proposed Budget 2021 incl. 1.7% (based on 2020 with 1.5%)	Forecast Budget 2022 incl. 1.7% (based on 2021 inflation rate with 1.7% inflation)
	Note				
Contributions from member countries	1	22,657,250	23,005,000	23,406,250	23,807,500
Contribution from Faeroe Island and Greenland		423,500	430,000	437,500	445,000
Recipients of Scientific Advice - incl. Special request	2	22,985,033	23,127,160	22,660,301	22,686,375
Revenue from Projects		3,025,685	2,314,867	2,872,141	1,310,106
Other revenue	3	3,523,974	1,805,000	2,760,000	2,760,000
Sales of publications		9,327	5,000	5,000	5,000
<b>Total revenue</b>		<b>52,624,769</b>	<b>50,687,027</b>	<b>52,141,192</b>	<b>51,013,981</b>
Salaries	4	37,314,271	38,797,470	40,392,319	42,117,513
Office expenses		2,326,847	2,120,000	1,966,885	1,816,885
IT expenses, including 75,000 for review of remote meetings facilities in 2020		3,738,991	3,729,547	3,518,764	3,588,500
Expenses for Council and ASC		1,026,150	1,030,000	2,500,000	930,000
Travelling and meeting expenses	5	7,731,008	2,878,623	7,526,000	8,317,000
Publications		586,542	547,662	510,000	510,000
<b>Total operating expenditures</b>		<b>52,723,809</b>	<b>49,103,302</b>	<b>56,413,968</b>	<b>57,279,898</b>
<b>Operating result</b>		<b>-99,040</b>	<b>1,583,725</b>	<b>-4,272,776</b>	<b>-6,265,917</b>
Financial revenue		191,671	200,000	200,000	200,000
Transfer from equity	6	0	2,186,872	5,454,000	4,641,800
<b>Net result</b>		<b>92,631</b>	<b>3,970,597</b>	<b>1,381,224</b>	<b>-1,424,117</b>

	Audited 2019	Estimate 2020	Proposed Budget 2021 incl. 1.7% (based on 2020 with 1.5%)	Forecast Budget 2022 incl. 1.7% (based on 2021 inflation rate with 1.7% inflation)
<b>1. Contributions from member countries (shares)</b>				
Belgium (2)	847,000	860,000	875,000	890,000
Canada (3)	1,270,500	1,290,000	1,312,500	1,335,000
Denmark (3)	1,270,500	1,290,000	1,312,500	1,335,000
Estonia (1)	423,500	430,000	437,500	445,000
Finland (1,5)	635,250	645,000	656,250	667,500
France (4)	1,694,000	1,720,000	1,750,000	1,780,000
Germany (4)	1,694,000	1,720,000	1,750,000	1,780,000
Iceland (3)	1,270,500	1,290,000	1,312,500	1,335,000
Ireland (2)	847,000	860,000	875,000	890,000
Latvia (1)	423,500	430,000	437,500	445,000
Lithuania (1)	423,500	430,000	437,500	445,000
The Netherlands (3)	1,270,500	1,290,000	1,312,500	1,335,000
Norway (4)	1,694,000	1,720,000	1,750,000	1,780,000
Poland (3)	1,270,500	1,290,000	1,312,500	1,335,000
Portugal (2)	847,000	860,000	875,000	890,000
Russia (3)	1,270,500	1,290,000	1,312,500	1,335,000
Spain (3)	1,270,500	1,290,000	1,312,500	1,335,000
Sweden (3)	1,270,500	1,290,000	1,312,500	1,335,000
United Kingdom (4)	1,694,000	1,720,000	1,750,000	1,780,000
The USA (3)	1,270,500	1,290,000	1,312,500	1,335,000
	<b>22,657,250</b>	<b>23,005,000</b>	<b>23,406,250</b>	<b>23,807,500</b>
<b>2. Recipients of Scientific Advice</b>				
European Commission	13,673,783	12,665,000	8,536,938	8,454,377
NEAFC	2,442,309	2,486,515	2,486,500	2,486,500
OSPAR	1,404,213	1,404,213	1,200,000	1,200,000
HELCOM	593,221	593,221	480,000	480,000
NASCO	559,079	569,198	560,000	560,000
United Kingdom			4,128,062	4,210,623
Norway	955,712	955,712	986,539	1,003,310
Iceland	530,162	530,162	547,262	556,565
Special request EC DG-MARE	538,432	2,235,000	2,235,000	2,235,000
Special request and contracts	2,288,122	1,688,139	1,500,000	1,500,000
	<b>22,985,033</b>	<b>23,127,160</b>	<b>22,660,301</b>	<b>22,686,375</b>

	Audited 2019	Estimate 2020	Proposed Budget 2021 incl. 1.7% (based on 2020 with 1.5%)	Forecast Budget 2022 incl. 1.7% (based on 2021 inflation rate with 1.7% inflation)
<b>3. Other revenue</b>				
Revenue from ICES Journal	1,661,642	1,500,000	1,500,000	1,500,000
Revenue from Training courses	848,280	100,000	550,000	550,000
ASC Fees	714,397	0	490,000	490,000
Miscellaneous	299,655	205,000	220,000	220,000
	<b>3,523,974</b>	<b>1,805,000</b>	<b>2,760,000</b>	<b>2,760,000</b>
<b>4. Salaries</b>				
Salaries	33,058,543	34,152,780	35,508,682	37,178,756
Fees external consultants	3,380	150,000	250,000	250,000
Overtime for Secretariat staff		15,000	15,000	15,000
Social activities and training	323,773	355,000	305,000	305,000
Honorarium ACOM/SCICOM Chair and ACOM Vice Chairs	3,790,603	3,974,690	4,163,638	4,218,757
ATP pensions 2/3 share	137,973	150,000	150,000	150,000
	<b>37,314,271</b>	<b>38,797,470</b>	<b>40,392,319</b>	<b>42,117,513</b>
<b>5. Travelling and meeting expenses</b>				
President, Bureau + sub Groups, statutory meeting, Finance Committee	242,236	112,631	335,000	276,000
Expenses special request (incl. travel)	1,237,655	260,322	750,000	750,000
Secretariat travel	950,372	234,250	765,000	765,000
External reviewing of assessments/benchmarking	292,254	235,712	500,000	500,000
Expenses projects (incl. travel)	625,624	350,264	600,000	600,000
Travel costs for RAC		60,000	60,000	60,000
ACOM travel and meeting costs	252,037	221,827	311,000	311,000
ACOM Chairs and vice chairs travel	703,732	234,457	480,000	480,000
Advice Drafting Groups travel	2,044,941	16,118	1,700,000	1,700,000
SCICOM travel and meeting costs, including equity financed Ocean Decade activities (175,000)	281,953	299,762	400,000	400,000
ICES co-sponsored Symposia	329,301	150,000	250,000	250,000
SCICOM strategic activities	141,300	20,034	175,000	175,000
Steering Group Chairs budget (travel)		550,000	550,000	550,000
Bring academic leaders from member countries				300,000
Training regarding remote meetings				50,000
4th ICES/PICES Early Career Scientist Congress				500,000

	Audited 2019	Estimate 2020	Proposed Budget 2021 incl. 1.7% (based on 2020 with 1.5%)	Forecast Budget 2022 incl. 1.7% (based on 2021 inflation rate with 1.7% inflation)
Training support for DG MAREs officials			100,000	100,000
Course revenue/expenses, including equity financed capacity and training activities (200,000/academic leaders and 100,000/training remote meetings. Divided equally between 2020/2021)	629,604	133,246	550,000	550,000
	<b>7,731,008</b>	<b>2,878,623</b>	<b>7,526,000</b>	<b>8,317,000</b>

## 6. Transfer from Equity

Additional resources in the secretariat (Financial administration, ACOM assessment workload issue and quality assurance)	1,786,872	3,734,000	3,791,800
ASC in Copenhagen		1,570,000	
UN DECADE of Ocean Science	175,000	50,000	
4th ICES/PICES Early Career Scientist Congress			500,000
Bring academic leaders from member countries	100,000	100,000	300,000
Training regarding remote meetings	50,000		50,000
Review of remote meeting facilities	75,000		
	<b>2,186,872</b>	<b>5,454,000</b>	<b>4,641,800</b>

## Attachment 2

**Overview of realized and estimated revenue and costs for recurrent advice, in million DKK – for 2016, 2017, 2018, 2019 and 2020**

**Total (EC, NEAFC, NASCO, Iceland & Norway)**

Year	2016	2017	2018	2019	2020
Revenue	14,1	14,2	15,7	18,2*	19,4**
Direct Costs	15,2	13,9	15,0	16,7	18,0
Indirect Costs	2,9	3,1	2,9	1,2	1,3
Total Costs	18,1	17,0	17,9	17,9	19,3
Balance	-4,0	-2,8	-2,2	0,3	0,1

\*) Including special request DKK 538,000 (updated by the end of 2019, and based on actual costs). In 2019, EC DG MARE did not allow the transfer from unused funds reserved for special requests, to recurrent advice.

\*\*) Including special request DKK 2,235,000 in the agreement with EC DG MARE where it is possible to reallocate costs from non-recurrent advice to recurrent advice.

## Attachment 3

## Overview of on-going external projects, external projects in the pipeline, and contracts

Estimated project income 2020 – 2022

Table 1 lists the 13 ongoing projects in 2020, indicating their time of conclusion. None of the 13 projects are without eligible costs. Table 2 lists four projects in pipeline and Table 3 represents seven ongoing contracts and subcontracts.

Table 1 Project budgets

Project Name	Estimated total costs and overhead 2020 in DKK	Estimated total costs and overhead 2021 in DKK	Estimated total costs and overhead 2022 in DKK
<b>2033-AORAC-SA</b> (Atlantic Ocean Research Alliance Coordination and Support Action)	497,607		
<b>2039-ClimeFish</b> (Co-creating a decision support framework to ensure sustainable fish production in Europe under climate change)	79,904		
<b>2045-PANDORA</b> (Paradigm for New Dynamic Ocean Resource Assessments and exploitation)	127,668	209,000	209,000
<b>2049-ETC/ICM</b> (European Topic Centre on Inland, Coastal and Marine Waters 2019-2021)	300,000	760,000	
<b>2042-SeaDataCloud</b> (Further developing the pan-European infrastructure for marine and ocean data management)	41,679		
<b>2057-MEESO</b> ( Ecologically and economically sustainable mesopelagic fisheries)	321,698	250,000	250,000
<b>2051-QuitMed2</b> (Joint programme for GES assessment on D11-noise in Mediterranean Marine Region)	77,403	50,000	
<b>XXXX -Mission Atlantic-</b> Mapping and assessing the present and future status of Atlantic marine ecosystems under the influence of climate change and exploitation (starting September 2020)	162,866	474,669	287,866
<b>2056-EMODnet Physics IV</b> ( European Marine Observation and Data Network –Physics)	130,374	130,374	
<b>2043-EMODnet Biology extension</b> ( European Marine Observation and Data Network-Biology)	157,381	157,381	
<b>2044-EMODnet Chemistry IV</b> ( European Marine Observation and Data Network-Chemistry)	223,500	223,500	
<b>2040-EMODnet Ingestion II</b> (( European Marine Observation and Data Network-Ingestion)	53,977	53,977	
<b>XXXX- Baltic Data Flow</b>	140,810	563,240	563,240
<b>TOTAL</b>	<b>2,314,867</b>	<b>2,872,141</b>	<b>1,131,106</b>



Table 2 Projects in pipeline

Project	Project Period	Maximum Grant in DKK	2021- Expected income in DKK	2022- Expected income in DKK	Comments
BG10 - Fisheries in the full ecosystem context	2021 Q3-2026 Q2	3,352,000	419,000	838,000	Tasks and budget still being negotiated (two-staged proposal, first stage 23 January, second stage 8 September 2020)
BG-07- TechnoMare - Developing automated sensor systems for monitoring ocean health	2021 Q3-2025 Q2				Proposal pending
BG-03- BEGETRES					Being negotiated
European Marine Observation and Data Network (EMODnet)- Chemistry	2021-2023				Being negotiated
European Marine Observation and Data Network (EMODnet)- Physics	2021-2023				Being negotiated
European Marine Observation and Data Network (EMODnet)- Biology	2021-2023				Being negotiated
<b>Total</b>		<b>3,352,000</b>	<b>419,000</b>	<b>838,000</b>	

Table 3 Ongoing contracts and sub-contracts

Contract Name	Contract Period	Payments 2020	Payment 2021
BALTIC BIAS SOUNDSCAPE	2019-2020	212,325	
Impulsive noise registry for OSPAR	2017-2019	35,000	
Impulsive noise registry -HELCOM	2019-2020	7,986	
AMAP–ICES Development of assessment portal and related tool and services	2020 (Final payment)	40,000	60,000
HELCOM HEAT- Support to assessment development	2019-2020	61,016	
ECOMAR- Consulting services	2019-2020	74,032	
Joint Cetacean Database Programme (JCDP)	2020-2022	23,284	239,996
<b>Total</b>		<b>453,643</b>	<b>299,996</b>

**Attachment 4**

2019 Final Accounts and Audit book comments.



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**International Council for the  
Exploration of the Sea**  
H.C. Andersens Boulevard 44-46  
1553 København V  
Business Registration No 12063814

**Final Accounts 2019**

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## **Organisation details**

### **Organisation**

International Council for the Exploration of the Sea

Business Registration No: 12063814

Registered at: H.C. Andersens Boulevard 44-46, 1553 Copenhagen V, Denmark

Phone: 0045 3338 6700

Fax: 0045 3393 4215

Internet: [www.ices.dk](http://www.ices.dk)

E-mail: [info@ices.dk](mailto:info@ices.dk)

### **General Secretary**

Anne Christine Brusendorff

### **Finance Committee**

Chair: Ari Leskelä, Finland

Members: Karin Victorin, Sweden; Markus Vetemaa, Estonia; Pablo Abaunza, Spain; Fritz Köster, Denmark.

### **Bank**

Nykredit Bank A/S

Kalvebod Brygge 47

1780 Copenhagen V, Denmark

### **Organisation auditors**

Deloitte Statsautoriseret Revisionspartnerselskab

Weidekampsgade 6

P.O. Box 1600

0900 Copenhagen C, Denmark

## General Secretary's and Finance Committee's statement

The General Secretary and the Finance Committee have today considered and approved the Final Accounts of International Council for the Exploration of the Sea (hereinafter referred to as "the Council" or "ICES") for 2019.

The Final Accounts have been prepared in accordance with Rule 18 of the Rules of Procedure.

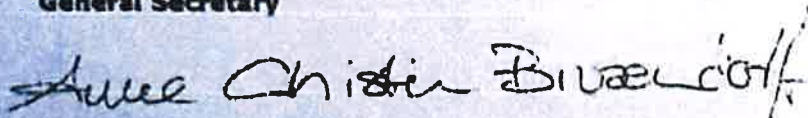
We consider the accounting policies applied appropriate and the accounting estimates made reasonable. Therefore, in our opinion, the Final Accounts give a true and fair view of the financial position at 31 December 2019 of International Council for the Exploration of the Sea and of the results of its operations for the financial year 1 January to 31 December 2019.

We believe that the General Secretary's review contains a fair review of the affairs and conditions referred to therein.

We recommend that the Final Accounts be adopted.

Copenhagen, 21 April 2020

General Secretary



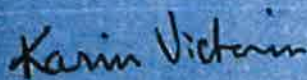
Anne Christine Brusendorff

Having examined the Final Accounts, we recommend that the Bureau submit the document to the Members of the Council for approval.

Finance Committee



Ari Leskelä  
Chair  
Finland



Karin Victorin  
Sweden



Markus Vetemaa  
Estonia



Pablo Abaunza  
Spain



Fritz Köster  
Denmark

## **Independent auditor's report**

### **To the members of International Council for the Exploration of the Sea Report on the Final Accounts**

We have audited the financial statements of International Council for the Exploration of the Sea for the financial year 01.01.2019 - 31.12.2019, which comprise the income statement, balance sheet and notes, including a summary of significant accounting policies. The financial statements are prepared in accordance with the Rules of Procedure of 22 October 2008.

In our opinion, the financial statements give a true and fair view of the Entity's financial position at 31.12.2019 and of the results of its operations for the financial year 01.01.2019 - 31.12.2019 in accordance with the Rules of Procedure of 22 October 2008.

#### **Basis for opinion**

We conducted our audit in accordance with International Standards on Auditing (ISAs) and additional requirements applicable in Denmark. Our responsibilities under those standards and requirements are further described in the *Auditor's responsibilities for the audit of the financial statements* section of this auditor's report. We are independent of the Entity in accordance with the International Ethics Standards Board of Accountants' Code of Ethics for Professional Accountants (IESBA Code) and the additional requirements applicable in Denmark, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

#### **General Secretary's responsibilities for the Final Accounts**

The General Secretary (Management) is responsible for the preparation of final accounts that give a true and fair view in accordance with the Rules of Procedure, and for such internal control as Management determines is necessary to enable the preparation of final accounts that are free from material misstatement, whether due to fraud or error.

In preparing the final accounts, Management is responsible for assessing the Entity's ability to continue as a going concern, for disclosing, as applicable, matters related to going concern, and for using the going concern basis of accounting in preparing the final accounts unless Management either intends to liquidate the Entity or to cease operations, or has no realistic alternative but to do so.

#### **Auditor's responsibilities for the audit of the Final Accounts**

Our objectives are to obtain reasonable assurance about whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Rule 20 (VII) of the Rules of Procedure adopted by the Council on 22 October 2008, ISAs and the additional requirements applicable in Denmark will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if,



## **Independent auditor's report**

individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these financial statements.

As part of an audit conducted in accordance with the Rules of Procedure adopted by the Council on 22 October 2008, ISAs and the additional requirements applicable in Denmark, we exercise professional judgement and maintain professional scepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Entity's internal control.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by Management.
- Conclude on the appropriateness of Management's use of the going concern basis of accounting in preparing the financial statements, and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Entity's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Entity to cease to continue as a going concern.
- Evaluate the overall presentation, structure and content of the financial statements, including the disclosures in the notes, and whether the financial statements represent the underlying transactions and events in a manner that gives a true and fair view.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

## **Independent auditor's report**

### **Statement on the General Secretary's review**

Management is responsible for the General Secretary's review.

Our opinion on the financial statements does not cover the General Secretary's review, and we do not express any form of assurance conclusion thereon.

In connection with our audit of the financial statements, our responsibility is to read the General Secretary's review and, in doing so, consider whether the General Secretary's review is materially inconsistent with the financial statements or our knowledge obtained in the audit or otherwise appears to be materially misstated.

Moreover, it is our responsibility to consider whether the General Secretary's review provides the information required under the Rules of Procedure adopted by the Council on 22 October 2008.

Copenhagen, 21 April 2020

### **Deloitte**

Statsautoriseret Revisionspartnerselskab  
Business Registration No 33963556



Nikolaj Erik Johnsen  
Identification no mne35806  
State-Authorised Public Accountant

## General Secretary's review

### General Operating Principles

The operations of International Council for the Exploration of the Sea ("ICES") are governed by the 1964 Convention agreed among the 20 Contracting Parties<sup>1</sup> and entered into force on 22 July 1968.

According to Article 2 of the Convention, ICES shall be concerned with the Atlantic Ocean and its adjacent seas and primarily concerned with the North Atlantic, with the following main goal:

- (a) to promote and encourage research and investigations for the study of the sea particularly those related to the living resources hereof;
- (b) to draw up programmes required for this purpose and to organise, in agreement with the Contracting Parties, such research and investigations as may appear necessary;
- (c) to publish or otherwise disseminate the results of research and investigations carried out under its auspices or to encourage the publication thereof.

In addition, the 2002 Copenhagen Declaration stresses the need for ICES to strengthen working relationships with users of scientific information on living marine resources and marine ecosystems, including fisheries management organisations, environmental commissions, as well as with stakeholders, thus requiring that ICES:

- apply a quality assurance scheme for its advisory function;
- adopt procedures to include the full consideration of data from a wide range of stakeholders;
- be flexible and timely in providing scientific advice to meet the needs of decision makers responsible for the stewardship of living marine resources and marine ecosystems without compromising the quality or reliability of the advice;
- ensure that ecosystem considerations, including the effects of human activities and climatic and oceanographic conditions, are taken into account; and
- frame advice in relation to fisheries management, giving full consideration to the ecosystem context.

The ICES Secretariat is located in Copenhagen, Denmark. A Host Agreement between the Government of Denmark and ICES on the office and the privileges and immunities entered into force on 24 July 1968.

The Council is an international legal entity with the capacity to enter into contracts, to acquire and dispose of immovable and movable property, and institute legal proceedings. The Council and its property, income and expenditures are exempt from all national direct and other taxes or duties.

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<sup>1</sup> Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Iceland, Ireland, Latvia, Lithuania, the Netherlands, Norway, Poland, Portugal, Russia, Spain, Sweden, the United Kingdom, and the United States of America.

**Primary activities**

The Final Accounts for the year 2019 show total revenue for ICES of DKK 52,624,769 of which DKK 22,657,250 was from national contributions. Another major component was income received from recipients of scientific advice amounting to DKK 20,158,479. The difference between revenue and expenditures for 2019 resulted in a minor surplus DKK 92,631.

National contributions to ICES are due in advance, or by the end of January of the budget year. As of March 2020, three national contributions have not yet been paid (reminders have been sent). There are no outstanding contributions from previous years.

**Development in activities and finances**

Over an eleven-year period (2009-2019)<sup>2</sup>, increases in national contributions were agreed in 2011 (2%), 2016 (1.9%), 2018, and 2019 as well as 2020 (1.3%, respectively 1.5% with reference to the need for inflation adjustment); in the other years, national contributions remained stable. The relative share of national contributions in 2019 was 43%.

On the expenditure side, salaries increased by the annual the cost of living increase (based on the Danish consumer index/inflation regulation) and by the step increases. The secretariat salary cost in 2019 was DKK 33,523,669 (roughly equivalent to the 2018 amount – the additional increase is due to additional human-resources in the Secretariat, covered from equity). The total amount of salaries, including honoraria for the ACOM Chair, ACOM Vice-Chairs, and SCICOM Chair, amounted to DKK 37,314,271. Following the Council's directions to achieve full cost recovery for the advisory services, we are closely monitoring the situation to ensure that our salary costs are covered by the specific agreement/the MoUs with advisory clients.

Work continues, during 2020 to follow-up on the implementation of a system that better reflects a full cost recovery agreement with advisory clients. The new system aims to improve verification and documentation of resources used for the advisory services in the Secretariat and the ACOM and SCICOM leadership. This system is based on "Temporary calculations of cost for providing advice" which have been agreed by the ICES Bureau and Council, based on considerations in the Finance Committee, and which have been shared with the advisory clients.

In 2019 a new simplified financial reporting format was developed, in order to provide a streamlined and accessible overview of the financial situation. The aim of the new financial reporting format is also to secure improved alignment with the audited accounts.

**Income statement for 2019**

	<b>Notes</b>	<b>2019 DKK</b>	<b>2018 DKK'000</b>
Contributions from member countries	1	22.657.250	22.363
Contribution from Faeroe Island and Greenland		423.500	418
Recipients of Scientific Advice	2	20.158.479	17.114
Income from Projects		3.025.685	3.057
Other income	3	6.350.528	4.370
Sales of publications		9.327	16
<b>Total revenue</b>		<b>52.624.769</b>	<b>47.338</b>
Salaries	4	(37.314.271)	(35.259)
Office expenses		(2.326.847)	(2.011)
IT expenses		(3.738.991)	(3.706)
Expenses for Council and ASC		(1.026.150)	(1.130)
Travelling and meeting expenses		(7.731.008)	(4.867)
Publications		(586.542)	(454)
<b>Total expenditure</b>		<b>(52.723.809)</b>	<b>(47.427)</b>
<b>Result of revenue and expenditure</b>		<b>(99.040)</b>	<b>(89)</b>
Financial income	5	275.256	716
Financial expenses	6	(83.585)	(88)
<b>Income over expenditure</b>		<b>92.631</b>	<b>539</b>
The years income over expenditure is distributed as follows			
Accumulated income over expenditure (equity)		92.631	539
<b>Total</b>		<b>92.631</b>	<b>539</b>

**Balance sheet at 31 December 2019**

	<b>Notes</b>	<b>2019 DKK</b>	<b>2018 DKK'000</b>
Capital Reserve Fund – Investment & cash at bank	10	<u>9.542.642</u>	<u>10.731</u>
<b>Non-current assets</b>		<b><u>9.542.642</u></b>	<b><u>10.731</u></b>
Receivable member contribution	7	11.909.700	12.493
Other receivables	8	5.515.185	6.920
Prepayments and accrued income	9	<u>309.731</u>	<u>305</u>
<b>Receivables</b>		<b><u>17.734.616</u></b>	<b><u>19.718</u></b>
<b>Investments</b>	10	<b><u>15.560.700</u></b>	<b><u>17.501</u></b>
<b>Cash at bank and in hand</b>		<b><u>7.559.237</u></b>	<b><u>2.346</u></b>
<b>Current assets</b>		<b><u>40.854.553</u></b>	<b><u>39.565</u></b>
<b>Assets</b>		<b><u>50.397.195</u></b>	<b><u>50.296</u></b>

**Balance sheet at 31 December 2019**

	<b>Notes</b>	<b>2019 DKK</b>	<b>2018 DKK'000</b>
Capital Reserve Fund (CRF)		10.524.953	9.097
Accumulated income over expenditure		<u>14.415.225</u>	<u>15.670</u>
<b>Equity</b>	<b>11</b>	<b><u>24.940.178</u></b>	<b><u>24.767</u></b>
Bank debt		0	307
Prepaid/pre-invoiced contributions		23.005.000	22.657
Prepaid projects funded by third parties		460.336	845
Other payables	12	1.530.586	1.720
Deferred income		<u>461.095</u>	<u>0</u>
<b>Total short-term liabilities</b>		<b><u>25.457.017</u></b>	<b><u>25.529</u></b>
<b>Equity and liabilities</b>		<b><u>50.397.195</u></b>	<b><u>50.296</u></b>
Lease of IT equipment	13		
Additional information	14		

## Notes

	2019 DKK	2018 DKK'000
<b>1. Contributions from member countries (shares)</b>		
Belgium (2)	847.000	836
Canada (3)	1.270.500	1.254
Denmark (3)	1.270.500	1.254
Estonia (1)	423.500	418
Finland (1,5)	635.250	627
France (4)	1.694.000	1.672
Germany (4)	1.694.000	1.672
Iceland (3)	1.270.500	1.254
Ireland (2)	847.000	836
Latvia (1)	423.500	418
Lithuania (1)	423.500	418
The Netherlands (3)	1.270.500	1.254
Norway (4)	1.694.000	1.672
Poland (3)	1.270.500	1.254
Portugal (2)	847.000	836
Russia (3)	1.270.500	1.254
Spain (3)	1.270.500	1.254
Sweden (3)	1.270.500	1.254
United Kingdom (4)	1.694.000	1.672
The USA (3)	1.270.500	1.254
	<b>22.657.250</b>	<b>22.363</b>
<b>2. Recipients of Scientific Advice</b>		
European Commission	13.673.783	11.939
NEAFC	2.442.309	2.404
OSPAR	1.404.213	834
HELCOM	593.221	541
NASCO	559.079	550
Norway	955.712	846
Iceland	530.162	0
	<b>20.158.479</b>	<b>17.114</b>



## Notes

	<b>2019 DKK</b>	<b>2018 DKK'000</b>
<b>3. Other income</b>		
Income from ICES Journal	1.661.642	1.572
Income from Training courses	848.280	493
ASC Fees	714.397	765
Miscellaneous	299.655	271
Special request	2.826.554	1.269
	<b>6.350.528</b>	<b>4.370</b>
<b>4. Salaries</b>		
Salaries are divided as follows:		
Salaries Secretariat	(32.608.447)	(31.058)
Other salaries relating costs	(915.222)	(795)
	<b>(33.523.669)</b>	<b>(31.853)</b>
Honorarium to external Chairs	(3.790.602)	(3.406)
	<b>(37.314.271)</b>	<b>(35.259)</b>
<b>5. Financial income</b>		
Interest	275.219	716
Exchange gains	37	0
	<b>275.256</b>	<b>716</b>
<b>6. Financial expenses</b>		
Exchange losses	(19.357)	(38)
Bank charges	(64.228)	(50)
	<b>(83.585)</b>	<b>(88)</b>

## Notes

	2019 DKK	2018 DKK'000
<b>7. Receivable member contributions</b>		
Belgium	860.000	847
Denmark	1.290.000	1.271
Latvia	430.000	424
Estonia	430.000	424
Germany	1.720.000	1.694
Ireland	860.000	847
Finland	645.000	635
Portugal	0	847
Russia	1.290.000	1.271
Sweden	1.290.000	1.271
Spain	1.290.000	1.271
United Kingdom	1.720.000	1.694
Greenland	84.700	0
<b>Related to the following year</b>	<b>11.909.700</b>	<b>12.493</b>
<b>8. Other Receivables</b>		
European Commission	3.893.938	5.325
VAT due from the Ministry of Foreign Affairs	515.628	438
Deposits due from parking spaces	7.953	8
Miscellaneous receivables	1.097.666	1.149
	<b>5.515.185</b>	<b>6.920</b>
<b>9. Prepayments and accrued income</b>		
Prepaid pensions	309.731	305
	<b>309.731</b>	<b>305</b>
<b>10. Investments</b>		
General investment and Capital Reserve Funds are invested in Danish short-term bonds listed on the Copenhagen Stock Exchange.		

## Notes

### 11. Equity

	Capital Reserve Fund DKK	Accumulated income over Expenditure etc. DKK	Total equity DKK
Equity at 1 January 2019	9.096.664	15.670.408	24.767.072
Unrealised fair value of bonds	80.475	0	80.475
Transferred to Capital Reserve Fund	1.347.814	-1.347.814	0
Profit/loss for the year	0	92.631	92.631
<b>Equity at 31 December 2019</b>	<b>10.524.953</b>	<b>14.415.225</b>	<b>24.940.178</b>

### 12. Other Payables

	2019 DKK	2018 DKK'000
Accounts payable	1.476.437	1.619
Danish State Pension (ATP)	54.149	101
	<b>1.530.586</b>	<b>1.720</b>

### 13. Lease commitments

Lease obligations falling due within:

0-1 years	1.281.073	316
1-5 years	2.370.336	460
> 5 years	0	0
	<b>3.651.409</b>	<b>775</b>

### 14. Morgages and securities

Investments have been provided as security for bank debt, see note 10.

## **Accounting policies**

The Final Accounts have been prepared in accordance with Rule 18 of the Rules of Procedure.

The Final Accounts have been presented applying the accounting policies consistently with last year.

## **Recognition and measurement**

Assets are recognised in the balance sheet when future economic benefits are probable and the value of the asset can be measured reliably.

Liabilities are recognised in the balance sheet when it is probable that economic benefits will flow out of the Organisation and when the value of the liability can be measured reliably.

In recognising and measuring assets and liabilities, any gains, losses and risks occurring prior to the presentation of the Final Accounts that evidence conditions existing at balance sheet date are taken into account.

## **Income statement**

### **Contributions and costs**

Contributions are recorded as revenue in the financial year to which they relate. Equally, costs incurred to generate the earnings of the year are recognised in the income statement.

### **Financial income and expenses**

Financial income and expenses comprise interest income and expenses. Realised gains and losses on bonds classified as investments are recognised in the financial year to which they relate. Unrealised gains and losses on bonds classified as investments are recognised directly in equity.

### **Projects funded by third parties**

Revenue from projects funded by third parties is recognised as income at the same time as costs related to the project are incurred as expenses.

Profit or loss on projects funded by third parties is recognised in the income statement when the project is finalised.

## **Accounting policies**

### **Balance sheet**

#### **Non-current assets**

Non-current assets comprise investments and cash at bank dedicated to Capital Reserve Fund.

#### **Investments**

Investments comprising listed bonds are measured at fair value at the balance sheet date, however, at a maximum price of 100, corresponding to the redemption price. Gains and losses on investments from the Capital Reserve Fund and General Fund are recorded in the related equity accounts. All other gains and losses are recorded in the income statement, except for unrealised fair value adjustments of investments, which are recognised directly in equity.

#### **Receivables**

Receivables are measured at cost. Provisions are made for bad debts.

#### **Unpaid contributions from projects funded by third parties (assets)**

Unpaid contributions from ongoing projects comprise costs related to work performed on projects during which funding is not yet received from third party.

Unpaid contributions are measured at cost.

#### **Prepayments from projects funded by third parties (liabilities)**

Prepayments from projects funded by third parties comprise funds received from third parties regarding projects, which are not finished at the end of the year.

Prepayments from projects funded by third parties are recognised as funds received from third parties.

## **International Council for the Exploration of the Sea**

### **Audit book comments on the final accounts 2019**

## Contents

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## Audit book comments on the final accounts for 2019

### 1. Our audit of the final accounts

#### 1.1 Final accounts

We have finalised our audit of the final accounts of International Council for the Exploration of the Sea (ICES/the organisation) for 2019 presented by the General Secretary and the Finance Committee. The final accounts show the following:

	<b>2019</b> <b>DKK'000</b>	<b>2018</b> <b>DKK'000</b>
Income over expenditure (minus is deficit)	93	539
Assets	50,397	50,296
Equity	24,940	24,767

#### 1.2 Affairs and conditions materially influencing the evaluation of the final accounts

Based on our audit, we point out the following particular affairs and conditions of relevance for the Finance Committee's evaluation of the final accounts:

##### 1.2.1 Segregation of duties

As mentioned in our audit book comments of 19 May 2011, issued upon acceptance of the audit, the possibility of preventing material misstatements in the final accounts, including misstatements caused by fraud, primarily depends on the extent to which sound internal control is ensured in the organisation of the recording systems and business processes.

We draw attention to the size of ICES's administration and limited resources. Smaller administrations increase the risk of misstatements in the final accounts as a result of intentional or unintentional actions or omissions. Any misstatements in the final accounts that result from fraud may not necessarily be detected during our audit since misstatements of this nature are usually concealed or hidden.

We point out that these comments should not be taken to mean that our audit revealed specific matters that could indicate irregularities or fraud, but they are intended to emphasise that segregation of duties is usually a material element in the internal control. We also point out that, during our audit, we did not find any misstatements caused by fraud.

We observed that five employees have a Mastercard with a credit maximum of DKK 50-150 thousand. This fact increases the risk of both intentional and unintentional errors. We recommend that the finance department follow up on a monthly basis as a compensatory check.



We have been informed that the organization reconcile the monthly statements for the credit cards every month.

We note that, during our audit, we did not identify any errors as a result of the lack of separation of duties.

### **1.2.2. Inquiries of the General Secretary and Finance Committee about the risk of fraud**

We have made inquiries of the General Secretary and the Chairman of the Finance Committee about the organisation's risk of fraud as well as the internal controls implemented by the Finance Committee to mitigate such risk. They have informed us that the Finance Committee and the General Secretary do not have any knowledge of actual, presumed or alleged fraud and that no particular risk of material misstatement is estimated to exist in the organisation's final accounts as a result of fraudulent financial reporting or misappropriation of organisation assets. We should point out that, during our audit, we did not identify any misstatements in the final accounts caused by fraud.

## **2. Audit of business processes and internal controls**

Our audit included determining whether the organisation's financial reporting systems, business processes and internal controls function properly in the areas covered by our audit. The purpose of the audit was to determine whether the internal controls are satisfactory, meaning

- if the controls have been designed appropriately in relation to the control objectives they are intended to ensure
- if they have actually been implemented in the enterprise, and
- possibly if they have functioned throughout the period covered by the audit.

The focus of our audit efforts has been on the internal controls relevant for the financial reporting areas and the financial statement items which we consider material and risky in terms of auditing. Accordingly, our review will not necessarily disclose all weaknesses or inadequacies of the business processes and internal controls reviewed.

As mentioned in the audit book comments issued upon acceptance of our appointment, it is the responsibility of Management to plan business processes as well as recording and control systems that are appropriate for bookkeeping and asset management to be handled in a way that is satisfactory in the organisation's circumstances, and the auditor is responsible for reviewing these business processes and internal controls as part of the audit of the financial statements.

Internal controls are those established in and around the organisation's business processes to ensure achievement of Management's directions (control objectives) in relation to financial reporting.

Our review included an assessment as to whether

- the internal controls ensure complete, accurate and timely processing of authorised transactions

- the internal controls prevent errors from occurring or ensure detection and adjustment of errors occurred
- documentation exists of the data processing and controls performed.

We have reviewed the following financial reporting areas:

Financial reporting area	Financial statement item
Revenue	Income from projects
Salaries	Salaries
Cash and payment systems	Cash at bank and in hand

For the financial reporting areas Revenue and Cash and payment systems, we have tested if controls have been designed appropriately and if they have actually been implemented in the organisation. We have also for this area tested if controls have functioned throughout the period covered by the audit.

We consider the administrative processes and internal controls, generally, to function satisfactorily and to form an adequate basis for ensuring complete, valid, accurate and timely registration and recording of the enterprise's transactions in the above areas that have been covered by our audit.

However, we should point out that our audit revealed certain internal control weaknesses – primarily in relation to controlling of the project accounts, including the accruals in the balance sheet for prepaid projects funded by third parties and the presentation hereof. We have observed, that the organization are in a process to improve the controls.

### 3. Comments on the final accounts

#### 3.1 Income statement

The individual items of the income statement have been reviewed and analysed based on specifications, vouchers and other reconciliation records prepared by ICES. We have taken a number of test samples, made analyses and reconciliations to verify the reliability of the registrations.

We have checked that contributions from member countries are recognised in accordance with agreed amounts with the ICES Council. A total of DKK 22,657 thousand has been recognised as income, according to agreement, and has not given rise to any comments.

Recipients of Scientific Advice are recognised in accordance with the memorandum of understanding and other agreements between ICES and the donor. A sample of contracts have been reviewed, which did not give rise to any comments.

The audit of the revenue did not give rise to any comments.

We have examined costs, and checked them against invoices, contracts or other basis material. We have compared salary costs to contracts and to the Salary Table.

The audit of expenses did not give rise to any comments.

We have by sample checked cut-off regarding recurrent expenses. We recommend that ICES is more consistent in its accounting policies meaning that the expense should be accrued in the month that it belongs to.

### **3.2 Balance sheet**

On 31 December 2019, the Capital Reserve Fund (CRF) in equity amounts to DKK 10,525 thousand, corresponding to 20% of total revenue in line with rule 20.3 of the Rules of Procedure (RoP) guidelines. The investments and cash in bank regarding CRF amount to DKK 9,543 thousand at 31 December 2019. We recommend that the organisation in 2020 increase the investment and cash in bank regarding CRF to 20% in order to ensure consistency between the CRF and the investments and cash in bank.

We have made unannounced cash counting on 26 February 2019. Furthermore, we have checked the procedures regarding bank reconciliation and follow-up during the interim audit in November.

We have compared ICES' cash in bank and investments to confirmation letters from the bank at 31 December 2019. The audit of Cash at bank and investments did not give rise to any comments.

We have analysed or reconciled receivables with supporting documentation recognised in the final accounts. The receivables consist primarily of member contributions (DKK 11,910 thousand), receivables of specific agreements (DKK 3,894 thousand) and other receivables (DKK 1,621 thousand).

The individual items of the income statement have been reviewed and analysed based on specifications from and decisions by the Council regarding contributions from member countries.

Liabilities have been reconciled to contracts, agreements, etc. and consist primarily of pre-invoiced member contributions for the following year.

The audit of the balance sheet did not give rise to any further comments.

## **4. Other comments**

### **4.1 Letter of representation and unadjusted misstatements in the final accounts**

As part of our audit of complex areas, the General Secretary has issued a letter of representation to us on the final accounts for 2019.

The audit did not give rise to any comments, and no misstatements were found during the audit.

### **4.2 Insurance**

Our audit did not include insurance taken out by the organisation. We recommend that the organisation's insurance cover be reviewed with the insurance organisation or insurance broker at least once a year in order to assess the cover taken out etc., including whether the cover provided by the insurance taken out is adequate, and whether the organisation may need to take out insurance in special areas.

In connection with the closing of accounts the General Secretary have confirmed that the insurance taken out is considered adequate in view of the organisation's circumstances to cover potential loss or damage arising in the organisation.

### **4.3 General IT controls**

We have not reviewed the organisation's general IT controls as any weaknesses or inadequacies therein will not in our view cause the final accounts to be materially misstated. We have been informed that the Agresso system is a part of the daily back-up.

## **5. Conclusion**

If the Finance Committee approves the final accounts 2019 in their present form, we will provide the final accounts with an unqualified auditor's report without emphasis of matter or other matter paragraphs or other reporting requirements.

## **6. Objective and scope of the audit, including definition of responsibilities**

Our audit book comments of 19 May 2011, issued upon acceptance of our appointment as auditors, contain a description of the objective, scope and performance of our audit, our reporting as well as a

definition of the responsibilities of Management and auditors. Please refer to those audit book comments. We recommend that a copy thereof be handed out to any new members of the Finance Committee.

Our audit did not include the General Secretary's review. However, we read the General Secretary's review to ensure that the disclosures in this report are consistent with the financial statements and with the information that came to our knowledge during our audit. Having read the General Secretary's review, we are to issue a statement on whether or not the General Secretary's review is consistent with the final accounts. Our statement on the General Secretary's review has to be placed immediately after our auditor's opinion on the final accounts.

## 7. Auditor's declaration

We declare that we comply with the legal requirements of independence and that we have received all the information requested during our audit.

Copenhagen, 21 April 2020

**Deloitte**

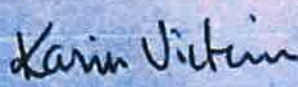
Statsautoriseret Revisionspartnerselskab


Nikolaj Erik Johnsen  
State-Authorised Public Accountant

Presented at the Finance Committee's meeting on 21 April 2020

**Finance Committee**

  
Ari Leskela  
Chair

  
Karin Victorin

  
Fritz Köster

  
Markus Vetemaa

  
Pablo Abaunza



**ICES**  
**CIEM**

International Council for  
the Exploration of the Sea  
Conseil International pour  
l'Exploration de la Mer

Council Meeting 2020

October 2020

Del-Doc 3.2

Agenda item 3.2

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## Status of Equity investments – in support of the implementation of the ICES Strategic plan 2020–2024

*The table presented provides a status of the Council agreed equity investments.  
Council is invited to take note of this information.*

<b>Investment</b>	<b>Status</b>
Developer Computer scientist with proven experience in software development lifecycle	Data programmer, Ihtsham UI Haq Minhas, started 06.07 2020
Developer Computer scientist with proven experience in software development life cycle	Ejaz Mohammad, continuation of contract, Application Programmer/ Developer
Technical Project Manager Technical science background with proven project management experience	Position not yet advertised
Technical Science Stock assessment expertise with strong coding, automation, and technical knowledge	Colin Millar, Professional Officer positioned filled as of started 01.01 2020
Additional resources in Finance Department	Søren Toft, Head of Finance started 01.10.2020
ACOM assessment workload	Contracts finalized during 2020
ASC in Copenhagen 2021	Planning phase for ASC
4th ICES/PICES Early Career Scientist Congress (co-funding: ECS travel support – competitive awards, invited speakers and representatives)	Will be arranged in 2022
One time support to UN Decade of Ocean Science	Some funds used in 2020, remaining funds to be used in coming year(s)
Bring academic leaders from ICES member countries together to develop multidisciplinary, multi-institutional coursework, research opportunities and scientific personnel exchanges, which will build capacity for meeting future science-based advisory needs. Initial steps will include 1-2 workshops. Deliverable will be a general curriculum with specific course offerings.	Due to COVID-19 first workshop will be arranged on-line
Training for chairing, running, and supporting remote meetings	Planning phase
Report on review of remote meeting facilities at ICES, and recommendations	Planning phase
<b>Total = DKK 12,671,000</b>	

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## ACOM report to Council October 2020

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### 1 Summary

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This report to Council contains information and questions on:

**2. Release and response to the ICES advisory plan - *for information***

Responses from requesters, observers and ACs

**3. Resilient framework of advice for ecosystem based management and quality control - *for information***

The new framework for ICES advice as an umbrella for fisheries and ecosystem advice

**4. Quality assurance of advice- *for information***

Explaining the current system and likely developments in the next 24 months

**5. Stakeholder engagement - *for information***

Following the 2019 request from Council, an analysis is presented and the way forward explained.

**6. Exciting and new in 2020- *for information***

- ICES Bycatch Road Map
- The success of ten years of work on data limited stocks
- Pulse trawl again
- ICES Viewpoint: risks of ships' scrubber discharge water
- New approach for graphics from standard graphs
- EU DG Environment - A new requester of advice
- Facilitating consultative evaluations on fisheries advice and management plans

**7. The impact of COVID-19 relevant to the provision of advice – *for information***

A brief description of advice specific consequences of COVID and actions taken (see Annex 1)

**8. Survey coordination after BREXIT- *for discussion***

what role should ICES play on the coordination of sampling and surveys once UK withdraws from the RCGs?

**9. Overview of advice activities in 2019- *for information***

A summary of major activities of ACOM in 2019.

### 2 Release and response to ICES Advisory Plan

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The advisory plan was launched in [December 2019](#), and was used as the basis for MIRIA and MIACO in January 2020. MIRIA is the meeting with advice recipients and MIACO is with observers to the advisory process.



## 2.1 Response of MIRIA and MIACO to the Advisory Plan

Both MIRIA and MIACO warmly welcomed the plan. When asked which priority areas were their priorities, they answered:

MIRIA: Assuring quality (core foundation to ICES) incorporating innovation and evolving advice.

MIACO: Assuring quality (core foundation to ICES) incorporating innovation, evolving advice and sharing evidence.

Both meetings had no difficulty distinguishing conceptually between the six areas, although many commented that some were linked.

## 2.2 Refresher: the Advisory Plan

The **objectives** of the plan:

1. Enhance credibility and transparency of advice, following FAIR and TAF principles
2. Move towards ecosystem advice and better utilise the science and data available in ICES
3. Share and communicate advice better to meet the stakeholders/ requestors needs

The **priority research areas**:



## 2.3 Tasks

A number of tasks for each priority area are given in the plan. Progress on these tasks will be reported to Council in 2021.

### 3 Resilient framework of advice for ecosystem based management and quality control.

Over the past 4 years, ICES has been attempting to develop a framework for ecosystem advice to run in parallel to the fisheries advice framework. In 2020, ACOM realised that the issue was about making the entire advice framework resilient to future challenges and embedding EBM and quality control into the framework. So the introduction to the advice (the old chapter 1) will be transformed into the “Guide to ICES advice”. This Guide will combine descriptions of the four steps of ICES advice (request formulation, knowledge synthesis, peer review and advice production, Figure 3.1) with ten overarching principles for ICES advice (Figure 3.2). The concept of principles was emphasised by the two scoping workshops, [WKECOFRAME](#) and [WKECOFRAME2](#).

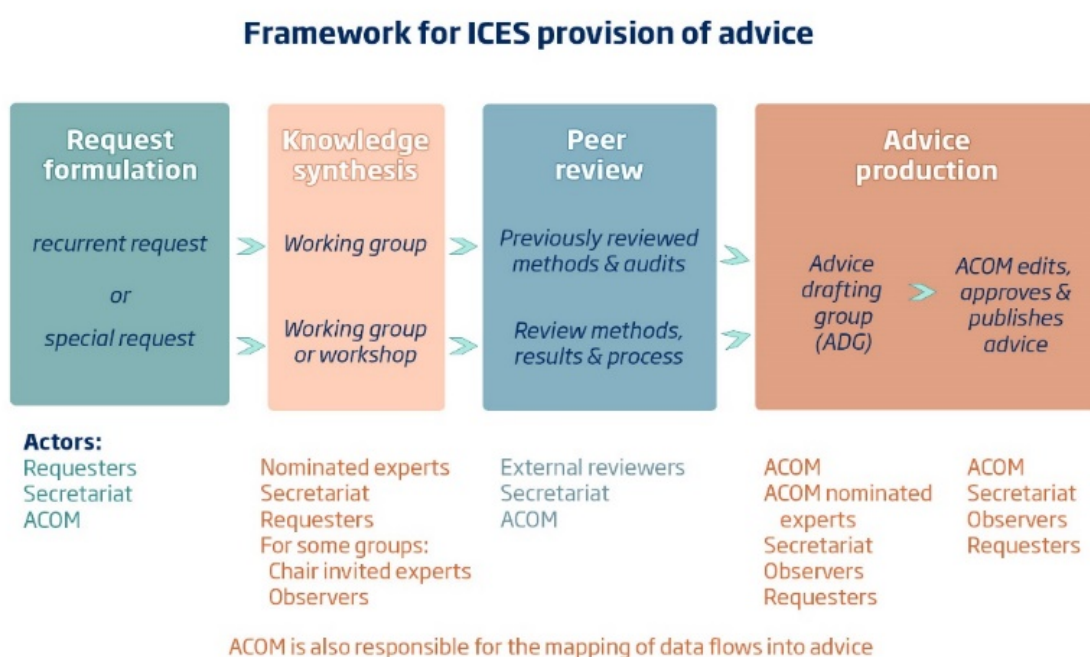
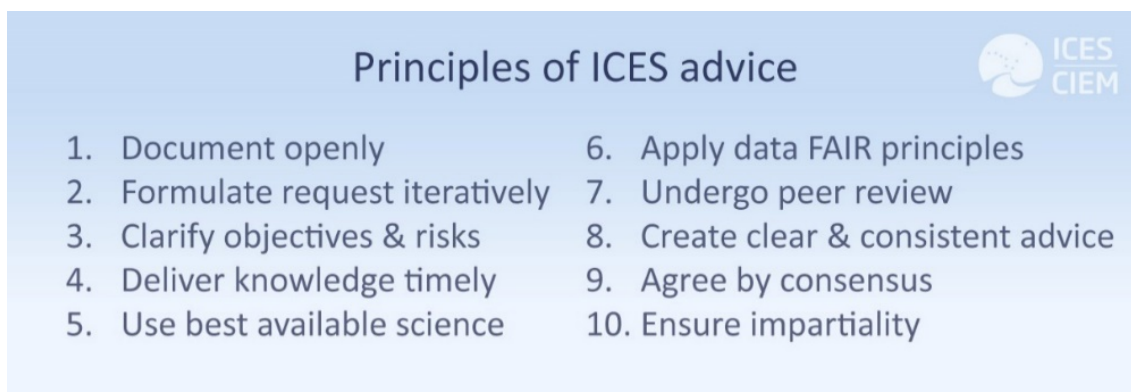


Figure 3.1. The four steps of ICES advice as described in the [Advice Basis](#).

The 10 principles are for the provision of marine scientific advice for the management of human activities in our seas and oceans. These principles are designed to ensure that advice from ICES remains relevant, credible and resilient to the complexities of ecosystem based management. Advice is provided in response to requests for advice from governments and intergovernmental organisations. The 10 principles will maintain ICES as the pre-eminent provider of independent evidence for societal decision-making to deliver marine conservation, management and sustainability goals in the Northeast Atlantic.



**Figure 3.2. A concise summary of the newly agreed 10 principles of ICES advice (given in full below).**

### **Full descriptions of 10 Principles of ICES advice**

#### **General**

Principle 1. The guidelines and procedures to produce ICES advice are documented, openly accessible, and up to date.

#### **Formulation of requests.**

Principle 2. Final request formulation is agreed through dialogue to clarify the requester's needs and expectations, the ICES process, likely resource implications, timelines, format of advice and roles and responsibilities of the engaged parties.

Principle 3. Where possible, existing policy goals, objectives, and the level of acceptable risk relevant to the advice request are identified. Where these objectives and descriptions of risk are unclear, ICES will identify these in the advice, and, where possible, provide options for management action and the consequences of the options and their trade-offs.

#### **Synthesis of knowledge to answer requests**

Principle 4. The deliberations of all relevant expert groups are published by the time the associated advice is published.

Principle 5. The best available science and quality-assured data are used. ICES selects and applies relevant methods for any analysis, including the development of new methods. The methods are peer-reviewed by independent experts and clearly and openly documented.

Principle 6. Data are findable, attributable, researchable, reusable, and conform to ICES data policy. Data flows are documented.

#### **Peer review**

Principle 7. To ensure that the best available, credible science has been used and to confirm that the analysis provides a sound basis for advice, all analyses and methods are peer-reviewed by at least two independent reviewers. For recurrent advice, the review is conducted through a benchmark process. For special requests through one-off reviews.

### **Production of advice**

Principle 8. Advice is comprehensive, unambiguous, and consistent with the synthesised knowledge, while taking the peer-review into account. All advice follows existing advice frameworks and any deviation from the frameworks or related, previous advice is identified and justified.

Principle 9. All ICES advice is adopted by the ICES Advisory Committee (ACOM), through consensus, prior to being made available to the requester and simultaneously published on ICES website.

Principle 10. ICES provides advice as an impartial response to a request, and does not lobby the requester or any other party to implement its advice.

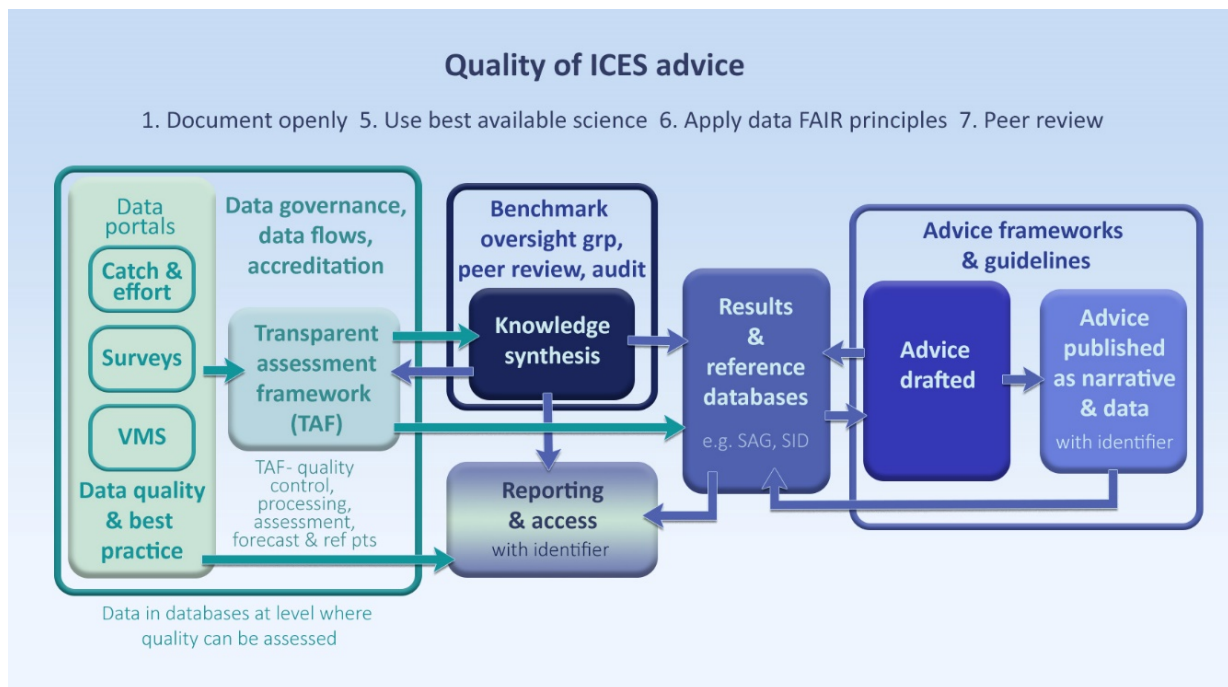
## **4 Quality Assurance of the advice**

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### **4.1 Priority area assuring quality**

ACOM is committed to assuring quality of our data and processes and improving the consistency of the advice. This is the first priority area in the advisory plan. ACOM will work with the network to enhance the existing quality control and assurance processes to form an end-to-end quality assurance framework that will encompass best practice in data management, data integration, and translation into advice.

Documents provided to ACOM and by the ICES data centre provide more detailed information and this report provides an overview. This report documents the key stages shown in Figure 4.1.



**Figure 4.1. Mapping the data provision for ICES advice (following the ICES advice principles 1, 5, 6 and 7, the provision of data and knowledge, TAF and advice drafting and publication. FAIR principals (findability, accessibility, interoperability, and reusability of data). More detail on TAF reporting in Fig 4.3.**

## 4.2 Best Practice and Data Quality

Aspects of best practice have recently been outlined in a document by ICES Data Centre and DIG (<http://doi.org/10.17895/ices.pub.4889>). Best practice spans elements of Quality Assurance and Quality Control, and addresses a number of broader communication and planning issues that are important for the implementation of a Quality Assurance Framework.

PGDATA (soon to be called WGQUALITY) has also initiated the development of a Quality Assurance Framework (QAF) on the collection and processing of data needed for assessment and advice during a 3-year programme (2018-2020). The expected benefits range from quality improvement (reducing errors etc.), to improved transparency and from improved accessibility to standardising tools. For example, PGDATA have reviewed best practice in terms of data screening of input data for stock assessments. PGDATA is morphing into WGQUALITY.

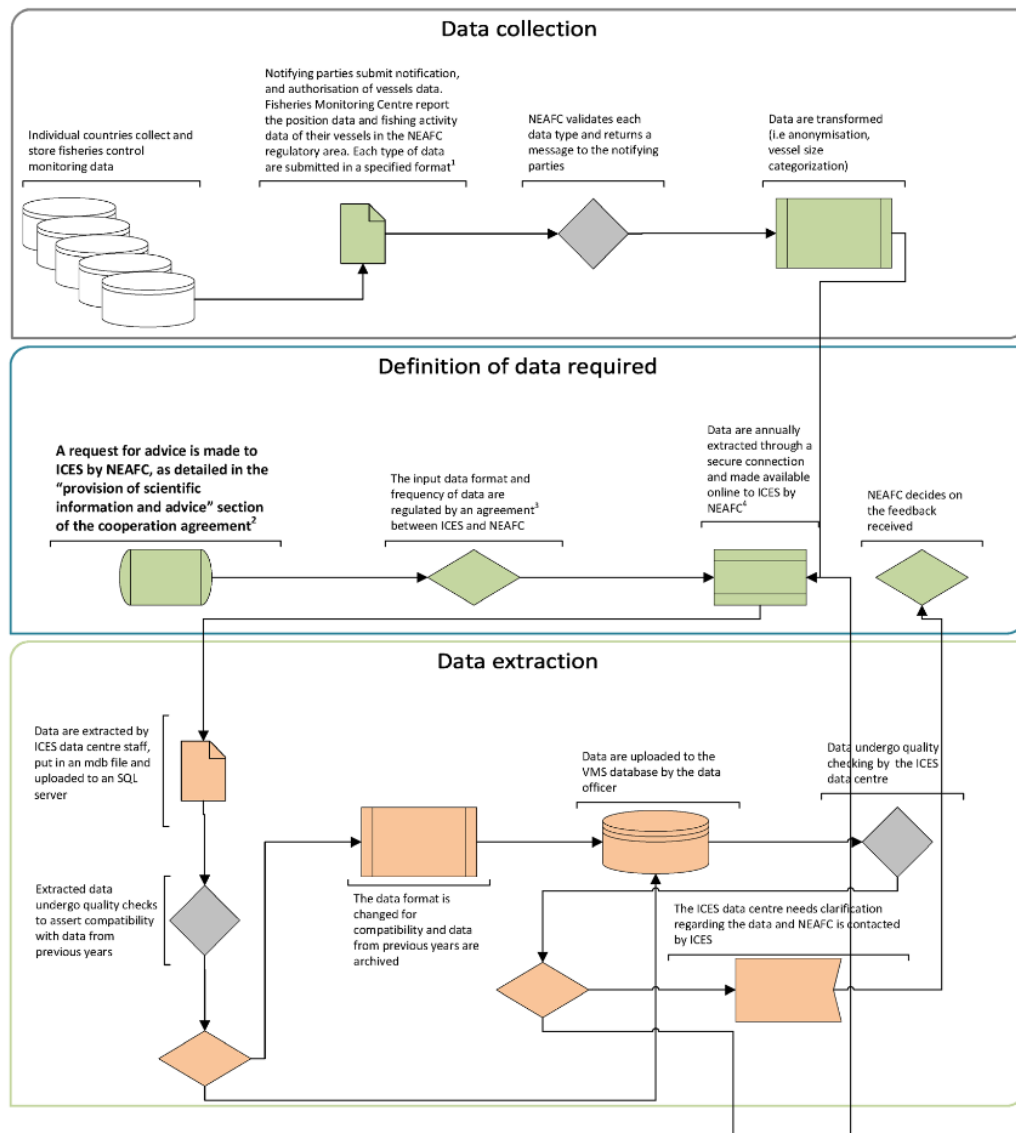
ICES experts groups, like the working group on spatial fisheries data ([WGSFD](#)) are now including audit trails in their reports based on [scripted procedures](#) to check the quality of data submitted. The [VMS data flow](#) is the first dataflow to be mapped and visualised (Figure 4.2). A further 29 data flows will be mapped by end 2021.

[WGCATCH](#) documents national fishery sampling schemes, establishes best practice and guidelines on sampling and estimation procedures, and provides advice on other uses of fishery data. They have also compiled a [repository](#) of resources on catch sampling.

### 4.3 Data Governance

The term data governance broadly covers the planning, oversight and control over management of data, data flows and the use of data and data-related resources. In the ICES context, this spans the entire process from the collection and processing of data from scientific surveys, through to its use in an assessment, to the eventual output of data/data products that underpin an advice statement.

The ICES Data Centre together with the Data and Information Group (DIG) are the overall responsible entities for data governance, and have recognised and formulated a series of actions that have led to standards, tools and policies across the entire ICES portfolio of data flows. DIG will now fall under the data, Science and Technology Steering Group (DSTSG). A number of working groups have now been established with similar ToR's to address aspects of data governance for key data flows relevant to ICES assessments. To date, governance groups are in operation for Fisheries dependent and independent data (Regional Database and DATRAS), age reading of otoliths ([SmartDots](#)), VMS and AIS data (Spatial Fisheries Data) and acoustic database governance and TAF.



**Figure 4.2 Extract of data flow visualisation for Vessel Monitoring System (VMS) and Catch Data in the North East Atlantic Fisheries Commission (NEAFC).**

In 2019, DIG with the Data Centre reviewed accreditation schemes for the ICES Data Centre. Accreditation is based on the ISO 9001 standard for Quality Management. This review was presented to Bureau and Council and a decision was taken to pursue Core Trust Seal Certification (CTS). This will ensure that effort and resources that this will be put place on ICES to achieve this certification. Several national institutes providing data to ICES are already accredited by various certification bodies for their data management systems. The initial accreditation will focus on data actively managed through the ICES Data Centre, as this document recognises, data quality at all steps in the supply chain are important. The next stage of accreditation will broaden the scope, to look at data provided by the ICES network that are currently not actively managed through the ICES Data Centre. This does not necessarily entail that these data will come under the scope of ICES Data management systems, it does however mean that it is probable that these data flows will need to be documented to a level where their quality can be assessed on a par with ICES Data Centre data flows.



#### 4.4 Quality control of aging and biological sampling

The ICES Working Group on Biological Parameters ([WGBIOP](#)) general aim is to review the status of current issues and developments associated with biological parameters, supporting the Data Collection Framework and end user (stock assessment) requirements.

The [Data Quality Assurance Repository](#) contains best practice guidelines, method and calibration reports and various manuals on ageing and maturity estimation. In addition the [SmartDots](#) platform has been developed to facilitate age readings based on otolith images.

#### 4.5 Quality Control of Survey Data

ICES has over the last 5-6 years made great strides towards documenting its procedures ([SISPS](#)) and implementing survey data quality checks both at the national level of data submitter as well as within the survey expert groups (e.g. IBTSWG, WGIPS, WGNEPS, WGBIFS, WGALES, WGMEGS, WGSDAA, WKESIG). Survey products, such as Sweptarea are increasingly made available not only as publications, but as scripted open products hosted on the [ICES Github](#) repositories. This increases their use, accessibility for scrutiny and widens the pool of experts working with these products – which all increase the overall quality of these data products, and underlying data. As of 2021, the SISPS will morph and be subsumed into the long run ICES publication [TIMES](#). This will increase their credibility and legitimacy.

ICES hosts many of the survey data routinely used in stock assessments and advice in ICES managed databases (e.g. DATRAS, Acoustic Surveys, VMEs) and work is ongoing to ingest surveys not already available. For surveys not in ICES databased these should be available at a resolution that allows the quality of the survey data to be assessed. There are discussion ongoing about the future need for ICES to develop a database to house tagging data that is used in the assessment and advisory process.

#### 4.6 RDBES– Regional Database and estimation system.

Currently national institutes submit raised commercial fisheries data for use in stock assessment using the InterCatch system. ICES issues formal data calls outlining the data required and Member countries are responsible for ensuring the QC of inputted data. Many ICES countries also submit detailed commercial fisheries data for use by the EU Regional Coordination Groups (RCGs) to the Regional Database (RDB) which is also hosted by ICES.

The problems in the current system include:

- Lack of transparency
- Duplication of effort
- Lack of consistency
- Lack of data quality indicators

The Regional Database & Estimation system (RDBES) is currently in development and will replace both InterCatch and the existing RDB. It will store detailed



commercial fisheries sample data and allow it to be raised for use in stock assessments in a transparent manner.

The aims of the RDBES are:

1. Make data available for the RCGs
2. Provide a regional estimation system for ICES stock assessments
3. To increase the data quality, documentation of data, and the use of approved methods
4. To facilitate the production of fisheries management advice and reports,
5. To increase the awareness of fisheries data collected and the overall usage of these data.

The RDBES should be seen as part of the movements towards:

1. Statistically Sound Sampling Schemes (4S),
2. Greater regional coordination
3. Transparent Assessment Framework (TAF)

Improved inputs to ICES stock assessments and advice.

The development of the RDBES is being coordinated by SCRDB according to the timeline below. The ICES Council have agreed to support the development by making resources available to develop the RDBES. A major effort will be required by the ICES community to support this initiative by attending the 4 workshops (WKRDB-POP2, WKRDB-EST2, WKRDB-RAISE&TAF, and WKRATIO) and responding to the test data call planned in 2020.

	RDB System	InterCatch	RDBES
2019	Production Data in/out	Production Data in/out	Development Test data in/out
2020	Production Data in/out	Production Data in/out	Test by selected stocks
2021	Production Data in/out	Production Data in/out	Test by all stocks
2022	Stay alive Data out	Stay alive Data out	Data call for 2021 data
2023	Stay alive Data out	Stay alive Data out	Data call for 2022 and all older years

#### 4.7 TAF – Transparent Assessment Framework

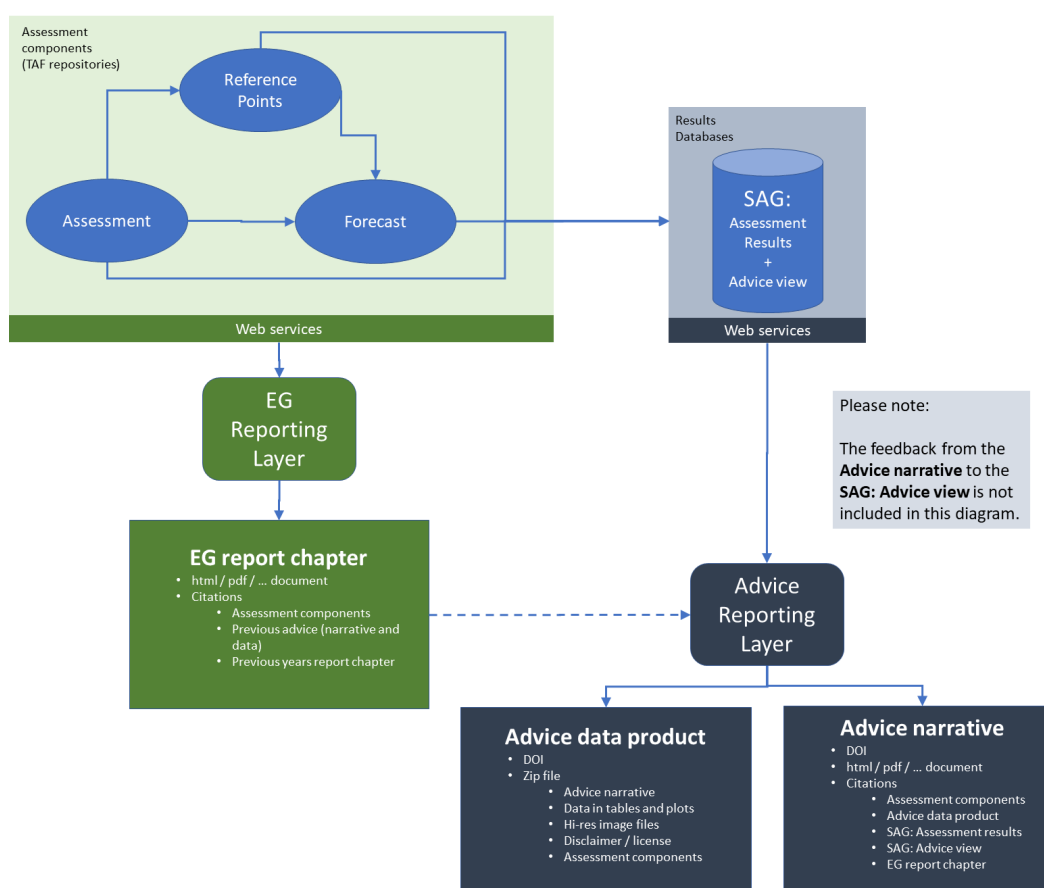
The Transparent Assessment Framework ([TAF](#)) an online open resource of ICES stock assessments for each assessment year. All data input and output is fully traceable and versioned. TAF was officially launched at the end of 2018 and there was significant progress in 2019 in terms of rolling out TAF to the ICES community with two training workshops (Celtic Seas in Galway, and North Sea in Aberdeen).

A further 2 training workshops are planned for Q1 2020 (Bay of Biscay and Iberian Coast, Lisbon and Baltic, Lysekil).

Currently there are 52 fully entered stocks in TAF, and 90 stocks partially entered. The aim is to get 200 unique stocks in TAF by 2022. ICES has also recently established The Working Group on Transparent Assessment Framework Governance (WGTAFGOV), chaired by Nils Olav Handegard (Norway) which will oversee the governance of TAF as it develops.

TAF aims to go beyond just documenting stock assessments, the 1<sup>st</sup> deliverable in the table in the next section indicates the intention to use TAF to document scientific data products (survey abundances). Deliverable 7, aims to broaden the use of TAF to also provide a platform for the review of data/code used in an advice product, this is especially relevant for advice that is not linked to the stock assessments i.e. VME, Fishing Effort Maps etc.

ACOM is now exploring how to increase the use of TAF across the network and also use TAF to improve reporting (make reporting more efficient) and improve auditing of data and methods.



**Figure 4.3** More detailed representation of the flow and reporting from the Transparent assessment Framework (TAF) into advice.

## 4.8 QA and QC in the ICES data Centre

From 2020-2024, the ICES Secretariat, and specifically the ICES data centre will receive additional ICES Council funding to include a number of data QA and QC task relevant to the advisory process as outlined below.

Del	Description	2020	2021	2022	2023	2024
<b>QA and QC of Fisheries independent and dependent data</b>						
1	Assist acoustic survey groups in using the ICES TAF for their abundance indices estimates that are used in stock assessments					
2	Align the DATRAS (biotic) and the Acoustic (biotic) format					
3	Redesign and new functionality on DATRAS web portal, including an updated data screening facility					
4	Fully operational ICES Regional Database (RDBES) with a regional estimation system such that statistical estimates for stock assessment can be produced from detailed sample data in a transparent manner					
5	Incorporate detailed data on Bycatch and PETS AND/OR Recreational data (to be determined by SC-RDB)					
<b>QA and QC of Assessment</b>						
6	200 unique stocks available in TAF					
7	Managed through TAF, functioning system and QA process to enable transparent documented reviews of data and code behind stock assessment results					
<b>Dissemination of Advice</b>						
8	Publish a web-based advice that includes several levels/layers (incl. popular advice, forecast options, full advice); and enables presentation of advice in an effective and consistent format					
9	Ecosystem overviews based on principles of web-based advice, using automation, FAIR principles and scripting for a consistent and recurrent product					

## 4.9 ICES Guidelines

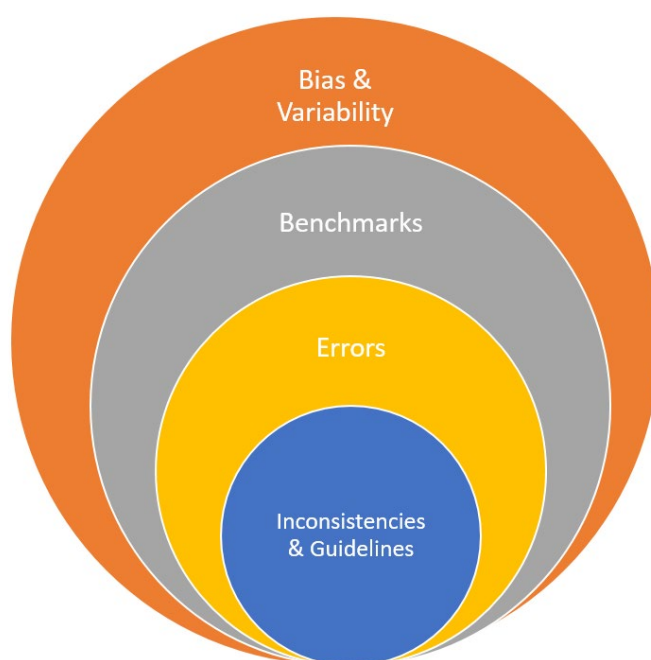
Currently there is a complex collection of suites of guidelines for many activities in ICES. In 2020, the Coordination group began reorganising and structuring these suites and a structure is currently being tested to enable accessible and trackable guidelines to be easily found and used.

## 4.10 Quality Assurance of advice

The [advisory plan](#) states that quality assurance “encompasses the entire process from data collection to the publication of objective and independent advice”. ICES is making demonstrable progress on quality control and assurance of data and on transparency of process. ICES uses a documented framework to provide advice (although not quality assured) for both fisheries and marine ecosystem advice. ICES is one of the key global marine science innovators in terms of access to data and outputs (see [stock assessment graphs](#), [stock information database](#), [vulnerable marine ecosystem portal](#), [survey and data portals](#)). All advice both traditional “advice sheets” (the narrative) and data products is published with identifiers e.g. advice dois (Digital Object Identifiers, e.g. <https://doi.org/10.17895/ices.advice.747>) thus ensuring international standards of metadata and longevity of traceability of the advice.

There is an ongoing need to improve the quality assurance of ICES advice, linked to the need to ensure that the production of evidence and the decision making process is transparent, consistent and that data provision adheres to the FAIR principles. Corrections to the advice have been discussed at previous meetings and the need to reduce the number and severity of any corrections. Since the start of the application of stock assessment models for fisheries management, retrospective inconsistencies have impacted the quality and consistency of advice. These inconsistencies are now particularly pertinent with fisheries management using evaluated management plans.

The problem of quality is broader than errors in the advice, greater consistency is required as our advice used to be required to managed reductions in fishing mortality and fleet capacity but is now required to manage to fishing mortality and stock status targets.



The ICES advisory plan commits ICES to create a quality assurance framework. However, the COVID-19 pandemic has postponed an initiative with requesters of advice and stakeholders described at MIRIA and MIACO:

ICES is also committed to use the best available science/information to provide fisheries advice in accordance with national commitments to the UN Fish stocks agreement (1995) and the developing UN Convention on Biological Diversity post 2020 framework. Best available science is also stipulated in the EU Common Fisheries Policy (CFP) and the Marine Strategy Framework Directive (MSFD). To ICES knowledge, no regional or national fisheries management organisation or bodies has developed a system to combine quality assurance of the entire advisory process with the requirement to use best available science. The initial inputs from PGDATA, are a first step.

There is also a commitment to use industry collected data and also to elicit the views of stakeholders during the advice process. These need to be reconciled with the independence and impartial nature of ICES advice (see section below) and the system described in figure 4.1.

**Postponed proposal: a partnership between ICES, managers and stakeholders to define, explore the challenges and develop a quality assurance framework for the entire advisory process.**

Member countries need to commit sufficient and suitably qualified experts to support ICES advisory process. ICES needs to further improve its quality assurance frameworks to facilitate the needs of the ICES community and those of the recipients of advice. ICES is striving for fully reproducible assessments, advice and services delivered in an efficient, transparent and timely manner.

## 5 Stakeholder engagement

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### 5.1 The challenge

Council 2019 requested *“ACOM will be asked to review the code of conduct for stakeholder engagement and will report back to the Council on actions taken and whether this has led to better outcomes in 2020.”*

ACOM has gone further than reviewing the code of conduct. It received with SCICOM and the Human Dimension Strategic Initiative an analysis of the potential strengths, weaknesses and opportunities for stakeholder engagement in ICES. This was carried out by Marta Ballesteros and Mark Dickey-Collas and submitted to the committees in summer 2020 as a working document. The analysis includes a consideration of best practice and the roles and responsibility of stakeholders. The analysis recommends the creation of an ICES stakeholder engagement strategy. In September 2020, both ACOM and SCICOM approved the development of a workshop to build the elements of an ICES stakeholder engagement strategy to protect and enrich ICES.

### 5.2 Background

ICES mission and vision frame stakeholders' engagement within the continuous improvement of the scientific basis for decision-making, while ensuring the coherence and reliability of policy-relevant science. The inherent tension between what stakeholders can bring and at what cost is reflected in the positions held by scientists and delegates regarding stakeholders' involvement in the ICES work.

How stakeholders' engagement has been implemented by ICES is poorly understood. The limited evidence shows that introducing participatory approaches in ICES has fostered knowledge exchange and is positively valued by the stakeholders for the implementation of an EBFM. However, stakeholders' engagement creates resistance from scientists believing in the role of science as the provider of truth, who feel that it confronts their legitimate expertise compared to the stakeholders experience-based knowledge. There is also reluctance from some ICES member countries that perceive stakeholders' involvement as a threat to the independence of the organization and, in particular, of the advisory process.

It appears that some of the debate about stakeholder engagement in ICES science and advice is grounded in the concept of facts (truth) and values (opinions). The science-policy interface has moved toward dealing with uncertainties, and scientists have moved from the providers of truth to providing transparency about consequences of trade-off choices. ICES takes responsibility for the production of advice which is scientifically accurate, explained well and in a transparent manner.

However, the days of the unidirectional approach to the delivery of applied science for policy and management are diminishing (if not over), and ICES must wrestle with maintaining its credibility and legitimacy when demands for, and benefits of, engagement and iterative production of the evidence are becoming apparent.

As a provider of evidence for ecosystem-based management (EBM), ICES recognizes that it must account for multiple sources and types of knowledge. Much of the evidence for EBM needs consideration of risk and uncertainty, normative values and trade-offs between management objectives, which should not be explored solely by researchers. Stakeholders gain from their involvement in ICES and this includes information and deeper understanding of the issues, facilitated and structured dialogue and deliberation, arenas for interaction and networking, etc. By participating in the ICES process stakeholders also gain significance, which needs to be linked to responsibility.

### 5.3 The issues

ACOM and SCICOM agreed that:

- In the strategic, science and advisory plans, ICES has a commitment to deeper and wider engagement with stakeholders.
- Stakeholder engagement has evolved in an unstructured manner in ICES.
- Engagement with stakeholders offers opportunities and poses threats.
- ICES has no objectives for engagement and no overarching strategy.
- Tensions exist through the network.
- There is no monitoring and evaluation of stakeholder engagement in ICES.

There are a number of key questions that need to be addressed:

1. Why and how is ICES engaging with stakeholders?
2. How does ICES not compromise perceived scientific integrity?
3. What are the responsibilities of stakeholders?
4. How does ICES maintain effective engagement?
5. Are all relevant stakeholders engaged with ICES?
6. How does ICES address power dynamics during engagements?
7. What objectives and indicators will be set to evaluate the performance of the strategy, measure progress and guide improvement?
8. Can an engagement strategy require institutional innovation or can it fit into the current framework?

### 5.4 Analysis of stakeholder engagement in ICES

SCICOM and ACOM were provided with an analysis of stakeholder engagement in ICES (provided by Marta Ballesteros, Spain; and Mark Dickey-Collas, ACOM Chair). The current informal objectives for ICES engagement with stakeholders are multifaceted. ICES interacts with stakeholders with two main **aims**: to advance knowledge (science) and to support policy-making (scientific advice). The interactions take place with two main **foci**, namely achieving a specific product (a means to an end) or with a focus on the gains achieved by the interactions themselves (means in itself). So with this mix of **aims** and **focus**, many stakeholders in ICES can play many roles.



When considering the **aim** and the **focus**, four stakeholder roles can be further characterised as:

- an **expert** – to integrate experience-based knowledge into general knowledge base
- an **observer** – to maintain and improve credibility and legitimacy of advice
- a **participant** - to maintain and improve credibility of knowledge production and legitimacy of process
- a **partner** - to maintain and improve relevance and legitimacy of ICES advice.

Each of these roles is associated with different goals, attributes, expectations in terms of trust and power dynamics. Individual stakeholders can play different roles in different parts of ICES. Currently the word stakeholder has different connotations across the organisation. There is ambiguity about the expected role of stakeholders even when interacting through the same processes. For instance, by participating in workshops stakeholders might be doing so as an expert, an observer or a participant. More detail of this analysis can be provided as a documents submitted to ACOM and SCICOM for consideration.

## 5.5 Summary

There is no systematic compilation of the participation of stakeholders in the ICES engagement processes, creating blind spots for critical issues. Generally, multi-stakeholders dynamics favour those stakeholders with knowledge and resources that can afford to engage. While ICES accountability in the production and use of knowledge is well-grounded, that of the stakeholders remains diffuse. During its engagements, ICES must be prepared to accept that those engaged in a process have gaps in knowledge, differing perceptions of truth, have different concepts about uncertainty, and may react emotionally and with scepticism.

Several properties of engagement are well-covered by the ICES framework. These include access to the process is formally equitable and inclusive, procedural rules, and a degree of transparency in process. There continuing disquiet from member countries about the role of stakeholders in the advice process and in the authorship of ICES science reports. ICES has the aspiration to incorporate industry derived

data into the science base that could input into the advice. This will further challenge the classification of observers, rather than partners in the delivery of advice.

Best practice requires that ICES should regularly monitor, evaluate the roles and procedures around stakeholder engagement and consider reforms to the system in light of developing international best practice. As a provider of evidence for ecosystem-based management (EBM), ICES must account for multiple sources and types of knowledge. As part of the drive for a quality assured process, ICES will have to report where engagement/co-production occurs in the system.

ACOM and SCICOM agree that ICES needs to develop a stakeholder engagement strategy. There is no one optimal approach to stakeholders' engagement and more interaction does not equal to better interaction. Engagement in the ICES participatory processes must be based on recognising the importance of non-scientist input to the knowledge development and advice production. But it also means to accept that neither science nor scientific advice must be driven by partisan interest and stealth-issue advocacy.

**A resolution for a workshop on stakeholder engagement strategy (WKSHOES) is being considered by ACOM and SCICOM to draft the key elements of a stakeholder engagement strategy.**

## 6 Exciting and new in 2020

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### 6.1 ICES Bycatch Road Map

ACOM with partners developed a roadmap to deliver bycatch advice. The overarching goal of the roadmap for ICES bycatch advice on PETS is to assess the risk of, and the impact of fleet activity on incidental bycatch, and to include these in ICES Fisheries Overviews by 2022.

[http://ices.dk/sites/pub/Publication%20Reports/Advice/2020/2020/Roadmap\\_ICES\\_Bycatch\\_Advice.pdf](http://ices.dk/sites/pub/Publication%20Reports/Advice/2020/2020/Roadmap_ICES_Bycatch_Advice.pdf)

The road map enhances to role of WGBYC as the key expert group to deliver the roadmap (Figure 6.1).

The roadmap will initiate actions to more efficient consolidate data and knowledge, and plan future steps in ICES to address the requirements for the CFP, MSFD, and Habitats Directive, and EU seabird Action Plan relative to incidental bycatch of protected, endangered and threatened species (PETS). It is also being created to address the needs of Iceland, Norway, USA and Canada. The aim is linked to the change resulting from the [Commission Implementing Decision \(EU\) 2016/1251 \(EU MAP\)](#) “... In future, data will be provided through the ICES Regional DataBase and Estimation System (RDBES)”. The objective is to further improve and operationalise the required data flows to ensure ICES special and recurring advice, as well as the input to fisheries overviews, meets the highest quality as required under the [ICES Advisory Plan](#) and the users of ICES advice. This should hopefully assist not only to MSFD, Habitats Directive and CFP managers, but also variety of other stakeholders (incl. conservation lobby organisations).





Figure 6.1 The collection of groups feeding into the Bycatch Roadmap

## 6.2 The success of ten years of work on data limited stocks

2020 represents 10 years of development on data limited approaches (Figure 6.2). It will culminate in our first ever benchmark to assess data limited stocks against MSY reference points (Figure 6.3).



Figure 6.2. Charting the development of data limited approaches in ICES

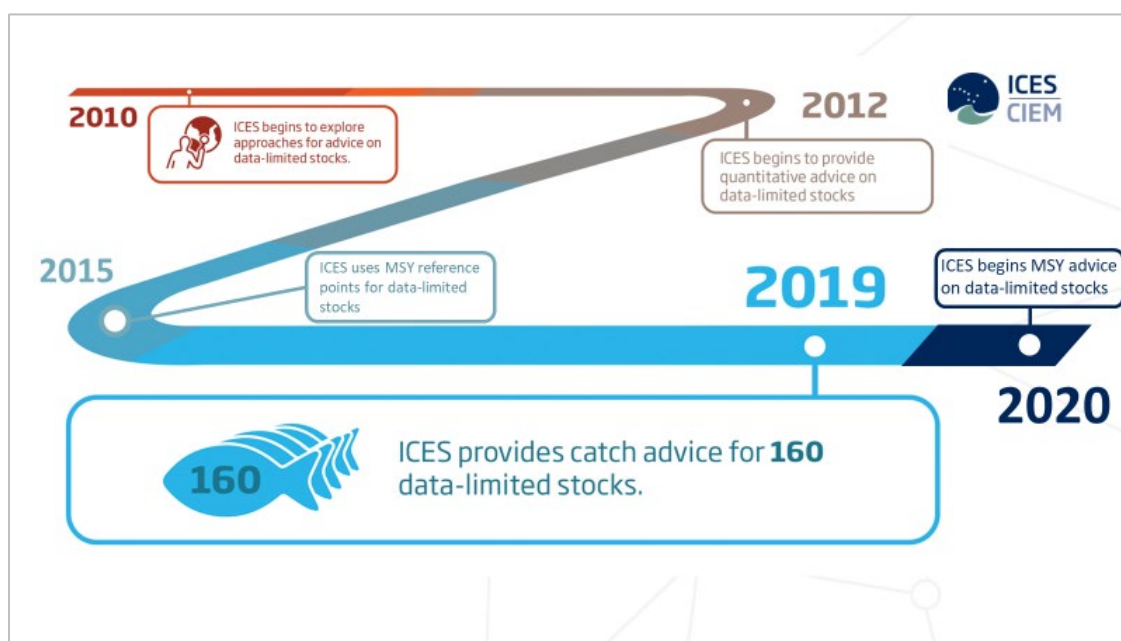


Figure 6.3. Schematic of the timeline of the application of data limited approaches in ICES for fishing opportunities advice.

### 6.3 Pulse trawl again

In 2020, ICES published more advice on pulse trawling, with its most forthright statement yet *“ICES advises that the change from conventional beam trawling to pulse trawling when exploiting the total allowable catch of North Sea sole contributes to reducing the ecosystem/environmental impacts of the sole fishery”*.

The advice was published after receiving a request from the Netherlands. [https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2020/Special\\_Requests/nl.2020.03.pdf](https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2020/Special_Requests/nl.2020.03.pdf)

It considered the:

- Direct harm and long-term adverse consequences to marine organisms caused by exposure to a commercial pulse stimulus.
- Risk to the sustainable exploitation of sole from pulse trawling
- The effect of pulse trawling on the selectivity of the sole fishery, discarding of fish, and on benthic invertebrates.
- The effect of pulse trawling on the benthic ecosystem of the sole fishery
- The impact of pulse trawling on sensitive habitats and threatened species / ecosystems.
- The effect of pulse trawling on CO2 emissions of the sole fishery.

ICES is currently also answering a request from the EU on defining and evaluating innovative fishing gears in EU waters.

#### 6.4 ICES highlighted the risks associated with ships' scrubber discharge water in a new Viewpoint.

Air pollution from maritime transportation is a major environmental pressure. Sulphur oxides released from the burning of marine fuels react with water in the air to form acid rain and are responsible for a variety of health and environmental impacts. In 2008, the International Maritime Organization (IMO) adopted regulations to control air pollution from ships, stipulating a progressive reduction in the emissions of sulphur oxide until 1 January 2020, when a maximum 0.50% of emissions could comprise sulphur oxides.



To comply with these limits, ships should switch to a fuel with lower sulphur content or install an exhaust gas cleaning system, also known as a scrubber. The price difference between heavy fuel oil and low sulphur fuels has meant that an increasing number of ships have opted to install scrubbers. The installation of a scrubber allows for the continued use of lower cost fuels that have higher sulphur content. Within the scrubber, the exhaust gas passes through a fine spray of alkaline water which readily dissolves sulphur oxides so that levels are sufficiently reduced in air emissions. Nitrogen oxides, and other contaminants are also washed out. However, the resulting scrubber discharge water is a chemical cocktail of acidifying, eutrophying, and contaminating substances and elements. The impacts of scrubber discharge water can be completely avoided through the use of alternative fuels, such as distilled low sulphur fuels. Distilled fuels have the added benefit that they remove the threat of heavy fuel oil spills from shipping activities.

Discussions had taken place within the IMO to emphasize that air pollution was not just transferred to the marine environment. However, while the number of ships with installed scrubber systems is increasing, scrubber discharge water remains poorly regulated.

**ICES recommended** that if the use of alternative fuels is not adopted, and scrubbers continue to be considered an equivalent method to meet the sulphur emissions limits, then there is urgent need for significant investment in technological advances and port reception facilities to allow zero discharge closed loop scrubber systems, improved protocols and standards for measuring, monitoring and reporting on scrubber discharge water acidity and pollutants, and

evidence-based regulations on scrubber water discharge limits that consider the full suite of contaminants.

<https://www.ices.dk/sites/pub/Publication%20Reports/Advice/2020/2020/vp.2020.01.pdf>

An initial response from the IMO to the background report was that, “it provides helpful input to the discussion on exhaust gas cleaning systems discharge water”. The Viewpoint was developed by collaboration between members of our expert groups on Shipping Impacts in the Marine Environment (WGSHP), Marine Chemistry (MCWG), Biological Effects of Contaminants (WGBEC), and Marine Sediments in Relation to Pollution (WGMS).

## 6.5 New approach and graphics for standard graphs

The graphics from the stock assessment graphs have been updated in terms of their look but more importantly they have moved from rasterized graphics, to a vectorised solution (Fig 6.4). This means that they are now scalable without loss of quality.

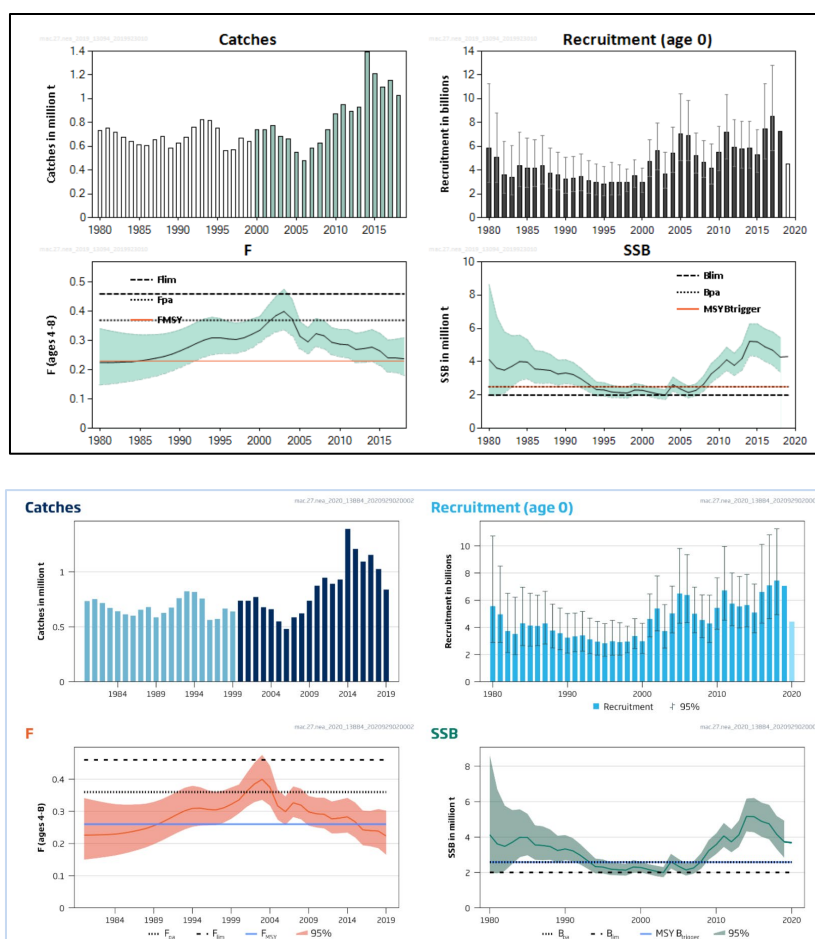


Figure 6.4. NE Atlantic mackerel fishing opportunities advice in 2019 and 2020, showing the change in graphic presentation of stock assessment graphs.

## **6.6 EU DG Environment – A new requester of advice**

In 2019, it became apparent that DGMARE and DGENV would benefit from separate grant agreements with ICES for requests for advice. This would allow them to focus on their priority issues. This year, ICES and DGENV signed a grant agreement to cover special requests for science to support the Marine Strategy Framework Directive and the Habitats and Birds Directives. The grant agreement is for four years and it complements the grant agreement with DGMARE.

## **6.7 Facilitating consultative evaluations on fisheries advice and management plans**

ICES is further seen by requesters as a partner/facilitator for more consultative approaches to evaluating and assisting the development of frameworks and management plans for fisheries. Key examples include the recent advice on Baltic salmon

([http://ices.dk/sites/pub/Publication%20Reports/Advice/2020/Special\\_Requests/eu.2020.02.pdf](http://ices.dk/sites/pub/Publication%20Reports/Advice/2020/Special_Requests/eu.2020.02.pdf))

and the upcoming Workshop on the future of eel advice (WKFEA). <http://www.ices.dk/community/groups/Pages/WKFEA.aspx>.

## **7 The impact of COVID-19 relevant to the provision of advice.**

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ACOM has worked with SCICOM and the secretariat to ensure a coherent and comprehensive response to the challenges posed by COVID-19 pandemic. ACOM has also explored the opportunities and potential leverage offered. Annex 1 provides the personal response by the ACOM Chair to the document to Council from Ireland. Many of ACOM's observations have been incorporated into the joint documents presented to Council on the matter.

One issue which is specific to ACOM and the Advisory services is necessity to swap budgets from underspent travel to secretariat staff costs and IT support. The EU grant agreement can be used as an example. Looking into the budget spent for the first 6 months under the specific grant agreement 2020 it is clear that due to the dramatically changed working conditions, the resources for travel and meetings has been underspent, whilst the resources for personnel costs and IT have been overspent in comparison with what was budgeted. The workload has been higher for the Secretariat in order to facilitate the online nature of advice production and the available IT infrastructure had to be updated quite urgently and outside the otherwise planned schedule. This represents an overspend of personnel and IT costs of approximately 50-60% in quarters 1 and 2 of 2020. The IT costs for the remaining of 2020 are forecasted based on the current extra expenses related to a need for additional hardware, increased backup facilities, and increased usage of web-conferencing facilities.

## 8 Survey coordination after BREXIT

With the withdrawal of the UK from the EU, the situation about UK participation in EU systems for coordinating monitoring and sampling (such as RCGs) has become a challenge. ICES has used the leverage offered by the RCGs to reduce its activity and resources expended by those in the secretariat and committees in the arena of coordination of sampling and surveys.

This is likely to change. Delegates are asked:

1. what role should ICES play on the coordination of sampling and surveys now that the UK has been removed from the RCGs?
2. are resources available to create an ICES mechanism to maintain a coordinated and integrated approach?
3. what next steps should ICES take to ensure the objectives of the ICES strategic plan are achieved in terms of the quality, consistency and innovation of sampling and surveys?

## 9 Overview of the advice activities in 2019

### 9.1 Advice Issued in 2014–2019

The number of advice by type issued by ICES from 2014–2019 is as follows:

Advice type	2014	2015	2016	2017	2018	2019
Fishing opportunity	252	225	222	206	192	205
Special requests and other advice (SR)	19	14	29	31 (24)	38 (26)	44 (23)
Technical services	9	7	4	2	9	5

### 9.2 Recurring requests for advice

ICES advice on fishing opportunities covered 182 stocks in 2019

Area	Number of stocks for which advice was provided in 2019
Iceland and East Greenland	14
Barents Sea	7
Faroe Plateau	4
Celtic Sea and West of Scotland	39
North Sea, Eastern Channel, Skagerrak and Kattegat	49 (+7 reopening)
Bay of Biscay and Atlantic Iberian Waters	33
Baltic Sea	13
Widely distributed and migratory stocks	39



The reopening process for demersal stocks in the North Sea resulted in seven updates of advice released in June.

In addition to the recurrent advice on fishing opportunities ICES has provided advice in response to recurrent requests on ecosystem impacts of fisheries to:

**EU Commission:**

- Bycatch of small cetaceans and other marine animals – review of national reports under Council Regulation (EC) No. 812/2004 and other information
- New information regarding the impact of fisheries on other components of the ecosystem

**NEAFC:**

- New information regarding vulnerable habitats in the NEAFC Regulatory Area

### **9.3 Fisheries and Ecosystem Overviews**

ICES expanded the number of published Fisheries and Ecosystem Overviews during 2019. ICES have published Ecosystem Overviews for the Azores, the Barents Sea, Bay of Biscay and the Iberian Coast, Celtic Seas, Greater North Sea, Icelandic Waters, Norwegian Sea, and the Oceanic Northeast Atlantic.

Fisheries Overviews now includes the Baltic Sea, the Barents Sea, Bay of Biscay and Iberian Coast ecoregion – including mixed-fisheries considerations, the Celtic Seas - including mixed-fisheries considerations, the Greater North Sea - including mixed-fisheries considerations, the Icelandic Waters and the Norwegian Sea.

### **9.4 Special requests**

ICES provided advice in response to 27 special requests in 2019; while the number of special requests has been approximately at the same level in recent years, the diversity and complexity of the requests are increasing. Examples are the requests to evaluate management strategies, where both the technical complexity of the analyses and the number of management scenarios to be reviewed are increasing.

**EU:**

- Further information on the distribution and unavoidable bycatches of eastern Baltic cod
- Immediate measures to safeguard eastern Baltic cod, on mixing with western Baltic cod and bycatches in different fisheries
- Monitoring TAC for herring in ICES divisions 7.a South of 52°30'N, 7.g–h, and 7.jk
- Report on the implementation of the Baltic Sea Multiannual Plan
- Revision of the contribution of TACs to fisheries management and stock conservation for greater silver smelt (*Argentina silus*) in ICES Subarea 7, and for boarfish (*Capros aper*) in ICES divisions 8.b and 8.c
- Seafloor assessment process for physical loss (D6C1, D6C4) and physical disturbance (D6C2) on benthic habitats

- Sentinel fishery for Norway lobster (*Nephrops*) in Functional Unit 31, Division 8.c
- Updated catch advice in 2019 for whiting (*Merlangius merlangus*) in Subarea 8 and Division 9.a
- ICES Viewpoint: Biofouling on vessels – what is the risk, and what might be done about it?

#### **NEAFC:**

- Evaluation of a harvest control component of a long-term management plan for haddock at Rockall

#### **EU and Norway:**

- Long-term management strategy of cod, saithe, and whiting, and of North Sea autumn-spawning herring
- Long-term management strategy of haddock

#### **Belgium:**

- Revision of catch advice in 2019 for sole (*Solea solea*) in divisions 7.f and 7.g (Bristol Channel, Celtic Sea)
- Revision of catch advice in 2019 and 2020 for sole (*Solea solea*) in divisions 7.f and 7.g (Bristol Channel, Celtic Sea)

#### **Iceland:**

- Evaluation of the current management plan for haddock in Icelandic waters, input data, and stock assessment
- Evaluation of the current management plan for saithe in Icelandic waters, input data, and stock assessment

#### **Norway:**

- Identification of ecological special/valued areas in the Barents Sea
- Management of the harp and hooded seal stocks in the Northeast Atlantic
- Revised 2019 advice on mackerel (*Scomber scombrus*) in subareas 1–8 and 14, and in Division 9.a (the Northeast Atlantic and adjacent waters)

#### **Portugal and Spain:**

- Evaluation of additional harvest control rules for the Iberian sardine stock in divisions 8.c and 9.a
- Evaluation of management and recovery plan for the Iberian sardine stock (divisions 8.c and 9.a)

#### **UK:**

- Review of the scientific basis for a UK non-detriment finding (NDF) for the international trade in European eel, seen in relation to CITES legislation



**OSPAR:**

- Current state and knowledge of studies into the deployment and environmental impacts of wet renewable technologies and marine energy storage systems

**9.5 Technical services**

In addition to the special requests, ICES provided 5 technical services in 2019:

**EU:**

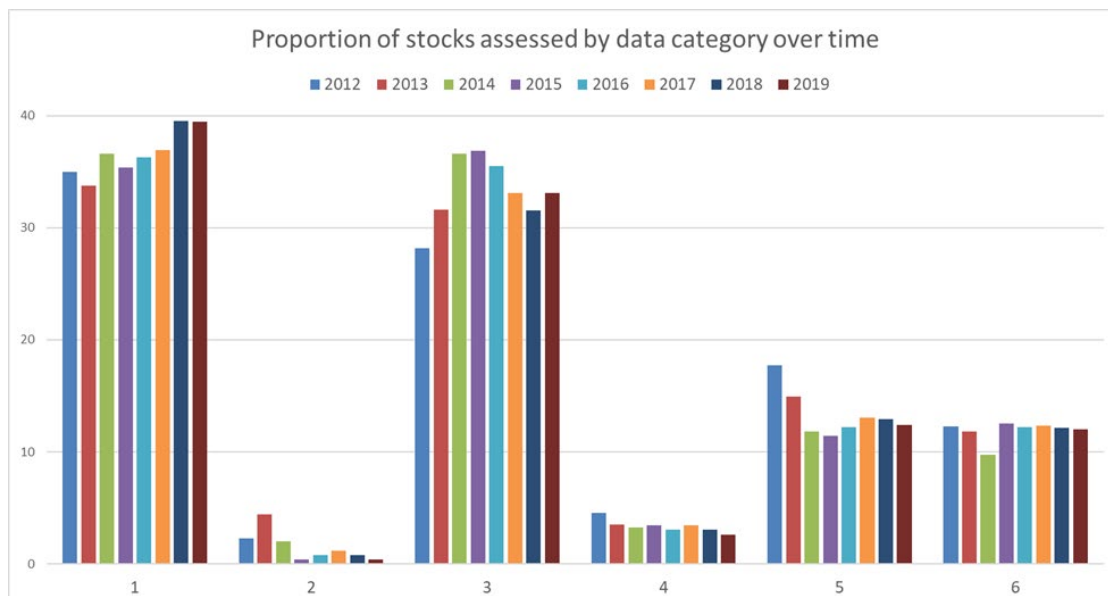
- Estimates of the likely catches in 2019 of whiting in Division 7.a, based on the TACs set for target stocks in the same area
- Improving the scientific assessment of "data-limited" stocks in the Atlantic
- Likely catches in 2020 of specific bycatch / non-targeted stocks with zero catch advice (cod 7e-k, 6a, 21, whiting 6a, 7a, plaice 7hjk)
- Seabass catch allocation tool
- Update on the list of areas where VMEs are known to, or likely to occur, and on the existing deep-sea fishing areas for 2009–2011

**9.6 MSY and management plan advice**

Fishing opportunities advice given in 2019 (by category) and number of stocks with MSY/Management plans advice. 14 stocks (cat 1) with Fmsy = Fp05 or Fpa

	All Stocks	Cat1+2	Cat3	Cat4+5+6
Number of Stocks	264	103	88	73
<b>Number of stocks with MSY or MP advice</b>	<b>97</b>	<b>96</b>	<b>1</b>	<b>0</b>
<b>% stocks with MP or MSY advice</b>	<b>37</b>	<b>93</b>	<b>1</b>	<b>0</b>

## 9.7 Number of stocks in categories (2012–2019)



## 9.8 Changes to headline advice per year

ICES re-issues advice if a correction to the advice sheet has been necessary. Four corrections had an impact on the headline advice; 2 of those corrections were related to advice issued in 2018. This represents 2% of all stocks.

2018 **Saithe (subareas 4, 6, 3)** - coding error in selectivity pattern - decrease in advised catch 135 035 t to 103 327 t

**Anchovy (Div 9.a)** - error calculation index of stock development - increase in advised catch southern component 3 760 t to 4 476 t

2019 **Cod (subdiv 22-24)** once include recreational catches - increase in the Fmsy upper 5 105 t to 8 866 t

**Sardine (divisions 8.a-b & 8.d)** - intermediate year assumptions - 0.7% upwards revision 2020 catch advice

## 9.9 Minor changes to advice sheets per year

In 2019, ICES re-issued 26 single-stock advice sheets due to minor issues (corrections of tables or figures as well as formatting issues); 1 Fisheries Overview (the Baltic) and 1 Technical Service (Deep-sea VMEs) were updated.

## 9.10 Number of stock assessments with Mohns rho > 20%

Retrospective inconsistencies are systematic changes in estimates of population size, or other assessment model-derived quantities, that occur as additional years of data are added to, or removed from, a stock assessment. These patterns are a problem, and can lead to major annual revisions when providing management advice. Mohn's rho is a metric calculated to show the degree of respective

inconsistency in a time series. All stock assessment working groups were in 2018 and 2019 asked to provide an analytical performance of category 1 and 2 age-based assessment, reporting the mean Mohn's rho (assessment retrospective analysis) values for R, SSB and F. The number of stocks with a retrospective bias was constant between the years despite an increase in the number of analysed stocks (see below table).

	2018	2019
Stocks <b>without large</b> retrospective inconsistency	44	46 (72%)
Stocks <b>with large</b> retrospective inconsistency	18	18 (28%)

### 9.11 Number of unique stocks in TAF

The Transparent Assessment Framework (TAF) is an online open resource of ICES stock assessments for each assessment year where all data input and output is traceable and versioned. The open framework enables anyone to easily find, reference, download, and run the assessment from any stage in the process leading to the published ICES advice for a given stock. TAF has made good progress since its initiation in 2016 and has now reached the adoption stage. **50 stocks** have been fully implemented in TAF, and **41 stocks** have been partially implemented.

### 9.12 Presentation of advice

The MoUs with EU, NEAFC, OSPAR and NASCO ICES include commitments for ICES to present the advice at meetings organized by the commissions. In addition the leadership has been requested to give presentations at Coastal State meetings, regional meetings and conferences.

#### Presentations of advice by ICES in 2019.

Organisation/meeting	Venue	Date	Presenter
Aquaculture AC	Brussels	16/10/2019	Simon Jennings
NWWAC Horizontal Working Group	Madrid	12/03/2019	Ghislain Chouinard
NW waters AC	Madrid	12/03/2019	Ghislain Chouinard
OSPAR BDC	London	25-29 March	Eugene Nixon and Sebastian Valanko
OSPAR HASEC	Norway	25-29 March	Hjalte Parner and Lara Salvany (ICES Secretariat)
EU and Norway Presentation of advice for final TAC for Pandalus for 2019	London	10/04/2019	Colm Lordan
OSPAR EIHA	Copenhagen	8-12 April	Eugene Nixon and Lara Salvany
Coastal States Revised Mackerel Advice	London	10/05/2019	Colm Lordan
EU and Norway New management strategies for cod, herring, saithe whiting	London	13-16/05	Mark Dickey-Collas

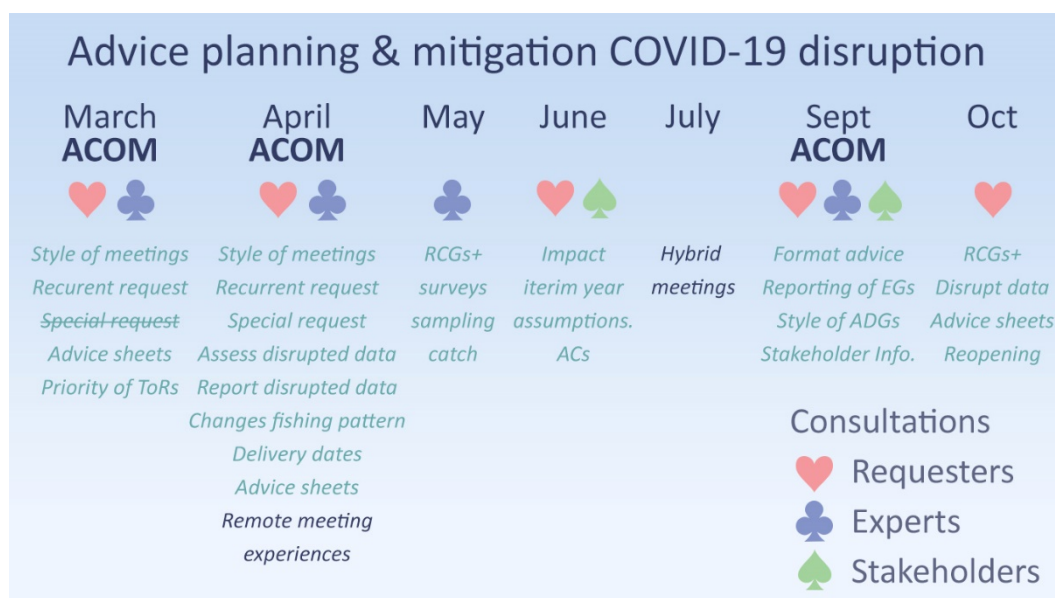
BaltFish; Advice on Baltic stocks	Stockholm	04/06/2019	Mark Dickey-Collas
NASCO, Annual meeting	Tromsø, Norway	03-07/06/2019	Martha Robertson (EG Chair) & Ghislain Chouinard
Baltic Sea AC. Advice on Baltic stocks	Copenhagen	11-12/06/2019	Colm Lordan
NWWAC. Advice on North Western Waters stocks.	Ghent	02-03/07/2019	Ghislain Chouinard
NSAC. Advice on North Sea stocks & MSEs	Brussels	09/07/2019	Colm Lordan
PelAC. Advice on herring stocks.	Lisbon	10-11/07/2019	Colm Lordan
NEAFC, PECMAS	London	01-03/10/2019	Lotte Worsøe Clausen, Rui Catarino, Eugene Nixon
PELAC Advice on other pelagic stocks	Den Haag	02/10/2019	Colm Lordan
How ICES works – EU Parliament Peche Committee	Brussels	03/10/2019	Colm Lordan
Mackerel advice - Coastal States NEAFC	London	15/10/2019	Colm Lordan
DGENV WGGES 2	Brussels	5-6/11/2019	Eugene Nixon Sebastian Valanko
LDAC Advice presentation	London	11/11/2019	Mark Dickey-Collas
NEAFC Annual Meeting	London	12-15/11/2019	Mark Dickey-Collas, Lotte Worsøe Clausen, David Miller
EU-Norway (so the advice for joint stocks in the North Sea and Skagerrak)	London	18/11/2019	Colm Lordan
NAFO annual meeting	Bordeaux, Fr	23-25 Sep	Mark Dickey-Collas

## Annex 1. Note from ACOM Chair on two recommendations from Ireland to Council.

I welcome the document to Council from Ireland and I note that two of the recommendations from Ireland refer to the provision of scientific advice by ICES. This note reports on the ongoing activities with reference to recommendation 2 and 3. This note is intended to inform and reassure Council, and look for Council's further support of ACOM efforts. ACOM regularly evaluates, finds mitigation measures and opportunities for the constantly changing situation.

Central to the ACOM approach is to leverage ongoing activities across the network; such as using the RCG monitoring of survey coverage and sampling. This reduces the risk of duplicating the effort required. ACOM is also acutely aware that its decisions have consequences for experts, requesters of advice and stakeholders. So ACOM, hugely assisted by the Advice Support team, has consulted widely and regularly with key players in the system. Prior to 2020, 50% of the committee's deliberations were by remote means, either by forum correspondence or WebEx. ACOM was already well versed in structured decision making, and sensitive to the challenges of meeting across 7 time zones. As suggested by the document from Ireland, ACOM has experienced challenges and utilised innovations that will leave a legacy.

*The timeline of ACOM activity since March resolving and mitigating pandemic disruption.*



### Ireland recommendation 2

*"The full impact of curtailed sampling in 2020 will not be apparent until 2021 assessments. ICES should plan to produce (in 2021 following the advice cycle) a synoptic analysis of the impact of reduced sampling on both the assessments and the advice, following up with clients to determine its impact on the satisfaction of advice users. Council should be aware of and support ACOMS plans that address this issue."*

The majority of the impact on observer information, surveys and sampling of catch appears to have occurred in EU member states, and the UK. ACOM has worked closely with DGMARE and the RCGs to use their information flows to monitor

disruption. Data from the UK is entering this system in 2020. Norwegian, Icelandic, Faroes, Greenland and Russian activities have not been greatly affected. ACOM is in close correspondence with requesters about their expectations for the quality of the advice. It is highly unlikely that the consequences of the disruption will be detectable in the stock assessments and forecasts in 2021.

Recommended guidance and a reporting template has been developed by ACOM for the expert groups that face disrupted data flows. The template is designed to report deviations from the stock annex. The impact on the quality of advice to answer special requests will be extremely difficult to assess.

### ***Ireland recommendation 3***

*“ICES should use the network experiences from 2020 as an opportunity to continue the discussion on “simplification/frequency of advice” and “benefits/downsides of remote assessment groups” and the “long term sustainability of the advisory process”. Council should be aware of and support ACOMS plans that address this issue.”*

ACOM is evaluating and reviewing the opportunities provided and challenges posed by the COVID-19 pandemic. ACOM is in consultation with requesters and experts on the format and nature of the advice provided, and the manner in which it is constructed. The objectives stated in recommendation 3, are not necessarily aspirations of all requesters. ACOM is assessing how TAF can change the nature of expert group reporting. Many in ACOM welcome the likely investment in hybrid meetings. ACOM, and the FRSG expert groups, have contributed to all efforts by Bureau and the secretariat to evaluate the strengths and weakness of our response to the changing arena.

Thus ACOM welcomes any further support from Council to maintain and build the resilience of ICES as to generate state-of-the-art marine advice for meeting conservation, management, and sustainability goals



**ICES**  
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International Council for  
the Exploration of the Sea  
Conseil International pour  
l'Exploration de la Mer

Council Meeting  
October 2020  
CM 2020 Del-Doc 5.1  
Agenda item 5

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## Elections

A one-time procedural exception has been proposed for 2020 to ensure the e-voting process runs smoothly during the on-line meeting, with one vote where the top-three candidates (most votes) will be elected. In advance of the meeting, via the [Council forum](#) many countries had already stated their support for the procedure.

According to the Rules of Procedure:

### **Rule 11**

*ii) Any other Vice-President shall be elected for a period of three years and shall not be eligible for re-election for the immediately succeeding term;*

### **Rule 5 (6)**

*At any time not more than one member of the Bureau shall be from the same member country.*

Currently Bureau consists of President Fritz W. Köster, DK, Bill Karp, US, Pierre Petitgas (FR), Per Sandberg (term concluding 2020), NO, Gerd Kraus, DE, and Manuela Azevedo (term concluding 2020), PT, Carl O'Brien (term concluding 2020), UK.

Nominations were submitted using the e-voting tool. The tool was configured so that submitted nominations are anonymous/confidential in line with the RoPs. Nominations were accepted until 1 October. The results of the nominations were also communicated via the Council forum. After which time, the General Secretary confirmed with nominees their willingness to stand for election. Nominees willing to stand for election were requested to submit a short written statement (less than 300 words) declaring their interest. These documents are available on [SharePoint](#). The election itself will be conducted in the break between day 1 and day 2 of the Council meeting. Council delegates will in due course receive more information about the election process itself.

**Annex 1. Exceptional ICES Election process – (Nominations in advance, elections during the second day of the Council meeting)**

This table summarizes the process; this will be reviewed at the Council meeting.

Call for nominations	Call communicated by Council forum 22 September (e-voting tool link for nominations will be used) All Council delegates may submit nominations via the e-form (confidential and anonymous).	Deadline for submission of nominations 1 October.
Call for confirmation of voting privileges	Member countries are only allowed one vote per country. Council delegates will be requested to confirm which delegate will be granted voting privileges	Deadline for confirmation of voting privileges 2 October.
Confirmation with nominees	Nominees will be asked to confirm their willingness to stand for election by email from the Gen Sec. Nominees shall submit a short written statement (less than 300 words) declaring their interest	Deadline for confirmation/submission of declaration of interest latest 9 October.
Election open	Declaration of interests will be posted on Sharepoint. The e-voting tool will be shared with Council members at the end of the first day of the meeting 21 October.	<p>Deadline for vote submission 22 October 13:00 (CET).</p> <p>The voting will depend on the number of candidates:</p> <ul style="list-style-type: none"> <li>- if three candidates only, these will be elected by acclamation</li> <li>- if more than three candidates, the three candidates receiving the highest number of votes will be elected</li> </ul> <p>(This is an exception to the normal voting procedures, and therefore the Rules of Procedure require approval from all delegates present.</p> <p>Extract from the ROPs: Rule 16. No proposal involving changes in the Rules of Procedure shall be considered</p>



		at a meeting of the Council unless either (a) two months' notice of the proposal has been given to the Contracting Parties and Delegates, or (b) <b>the Delegates present consent by unanimous vote.</b> )
New ICES Vice-Presidents announced	The outcome of the vote is announced at the beginning of the 2 <sup>nd</sup> day of the Council meeting.	

# SCICOM PROGRESS REPORT 2020

ICES SCIENCE COMMITTEE

ICES CM 2020 DEL-Doc 7.1/SCICOM:03

REF. COUNCIL

## SCICOM Progress Report 2020

An annual report to the ICES Council to describe the scope, scale and impact of ICES science, implementation of ICES Science Plan and the work of ICES Science Committee



**ICES**  
**CIEM**

International Council for  
the Exploration of the Sea

Conseil International pour  
l'Exploration de la Mer

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## 1 Extended Summary

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The ICES Science Committee continues to support ICES science to grow in scale, scope and impact. The general objectives of the Science Committee are to work with the ICES community and Secretariat to keep the ICES science programme dynamic, internationally relevant, and impactful; to ensure seamless links between science, data and advice; and to engage with scientists in ICES member countries and beyond by planning an annual cycle of meetings and workshops as well as the Annual Science Conference.

2020 has been and still is a challenging year for everyone. The COVID-19 pandemic has had a dominant effect on all aspects of daily life, and therefore also on how science in general, and the work of ICES expert groups has been carried out. Thanks to immense commitment and tireless work of the whole network, including all individual scientists and especially the Secretariat, the meeting activities and work continued, although in different ways than normally, and ICES was able to reach key achievements

In July, the transition between the outgoing and the incoming SCICOM chair was organised fully remotely and the new chair, Jörn Schmidt, took on his role in full on 1 August 2020.

Notable activities in 2020 included (i) the establishment of the Steering Group on Data Science and Technology (DSTSG); (ii) a stronger focus on supporting expert groups, including support for online meetings; (iii) furthering the engagement of new scientists participating in the ICES community; (iv) an increased frequency and strategic emphasis on science communication; (v) increasing the links between science and advice – a key product of which has been the recently released viewpoint on the effect of scrubber technology; and (vi) maintaining and developing international collaborations. These activities have taken place alongside the continued delivery of science outputs and publications by the expert groups.

One hundred and fifteen working groups, forty-five workshops and twenty benchmark workshops, supported by six steering groups, were active in 2020. Expert group meetings in 2020 saw a very high number of new participants, and had a higher overall attendance than in previous years. The exact reason for this cannot yet be conclusively determined, but one reason certainly was that experts haven't had to travel and thus had no travel costs. In July 2020 SCICOM approved DSTSG, which will start to work on from January 2021. DSTSG will be responsible for guiding and supporting expert groups that are developing, assessing and applying new technologies, as well as advancing data science, systems management, quality assurance, and data governance. DSTSG also reinforces the science priority emerging techniques and technologies.

Four new steering group chairs were elected in September 2020 to lead the new DSTSG and three existing steering groups: Ecosystem Observation Steering Group (EOSG), Ecosystem Processes and Dynamics Steering Group (EPDSG) and Integrated Ecosystem Assessments Steering Group (IEASG). The incoming chairs will work with the current chairs to ensure a smooth transition for 1 January 2021.

The development of the new resolution forms and a searchable resolution database has continued and is now in the technical development phase. The harmonisation of the information on all resolution types will simplify the process of drafting resolutions, especially for the different types of EGs that currently use three different forms. The database of approved resolutions will also facilitate more efficient searching and reporting of the expert groups, symposia, and publications resolutions, including filtering by region and science and advice priorities. The database will also enable the

tracking of links between groups Terms of Reference and science priorities, and facilitate the identification of expertise in the network.

One Co-operative Research Report (CRR) was published since the last SCICOM report to Council. A further seven reports are being prepared for publication in future years. Five Plankton ID Leaflet were published, one will be published soon, and seven are in preparation. Twelve Identification (ID) Leaflets for diseases in fish and shellfish are currently in preparation. Two Techniques in Marine Environmental Sciences (TIMES) were published and four are in the pipeline. There's has been overall a very strong increase in readership. For example, the average views of CRRs published in 2019 have increased substantially to 1700 views per report vs. around 200 - 400 previously. The reviewer acceptance rate is high for our in-house publications, at around 80%, indicating that these publications are considered important and relevant both within and without the ICES community. The publications website is undergoing a restructuring. The contents and the design are being updated in order to attract more visitors, and to make it more user-friendly for interested individuals from within and without the ICES community. The Science Impact and Publications Group together with the secretariat is also working on developing a new library platform for ICES. The new library will increase the findability and accessibility of ICES publications and will support the ongoing increase in outside recognition of ICES science. The group also recommended the adoption of CC-BY 4.0 licensing for all publications to allow a broad use of ICES science, while ensuring correct attribution of content to ICES.

Several training courses that were planned for this year have been cancelled or postponed to next year due to the COVID-19 pandemic. Two courses were moved online for 2020 – the Fish stock assessment and Bayesian training courses, which will take place in October and December respectively. The stock assessment course is fully booked, with candidates on the waiting list. However, despite the potential further reach of online courses, online teaching is still very work-intensive, and therefore issues regarding online teaching and online courses need to be further discussed in the near future.

The Data and Information Group (DIG) worked with the Data Centre on the Core Trust Seal (CTS) accreditation application, which was submitted in July 2020. Feedback from the CTS is expected by late September 2020. Core Trust Seal is based on requirements established by the World Data Systems (WDS) and the Data Seal of Approval (DSA), and certify core characteristics of trustworthy data repositories. DIG is also working towards a single data policy proposal that will address all aspects of how data is received, maintained and safeguarded by ICES.

Inter-institutional collaborations in 2020 have included running or setting up joint expert groups, including with PICES, IOC, IMO and PAME. At other levels, and with inputs from SCICOM, ICES has engaged in international processes linked to the Arctic, the UN Decade of Ocean Science for Sustainable Development, and science and advice in Areas Beyond National Jurisdiction. All four ICES co-sponsored international symposia in 2020 have been postponed to 2021. The Oceans Past Symposium VIII was held as a virtual meeting in 2020. With the two symposia already planned for 2021, we now have six symposia to be held in 2021.

The implementation of the ICES Science Plan will be further progressed and supported by the ongoing efforts to introduce more consistent and concise resolution forms, to improve and quality control expert group descriptions and terms of reference and to implement the resolutions database. The main priorities beyond this are detailed in the implementation plan and include efforts to

- (i) promote ICES science to a wider international constituency and to early career scientists through collaborations and training, broadening of expert groups, targeted early career and new topic events at the ASC and ICES co-sponsored symposia, increased use of science highlights and an active communications strategy, development of impact case studies, and broader ASC formats;
- (ii) continue to provide clear and accessible paths for new participants to engage with ICES;
- (iii) continue to strengthen links between science and advice;
- (iv) put in place and embed all processes for monitoring implementation of the Science Plan (especially collation and reporting of science information and statistics across all expert groups in a consistent way);
- (v) increase international scientific cooperation through targeted and concrete activities with scientific partner organisations like PICES, CIESM, IOC, FAO, AMAP; IASC, GFCM; and
- (vi) improve the link to national science activities relevant to ICES.

Beyond the implementation plan, the focus is on further developing effective work environments for expert groups meeting remotely, early career scientists, and developing formats for online and hybrid symposia and the ASC, which support the scientific exchange and networking capabilities for all scientist.

## **2 Introduction**

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This introduction defines the purpose of the SCICOM Progress Report and the role of SCICOM and associated groups. Much of the content of this Progress Report is compiled from submissions provided by ICES groups and the ICES secretariat.

### **2.1 Purpose of the Progress Report**

The SCICOM Progress Report is an annual report to the ICES Council that summarises the scope, scale and impact of ICES science in 2020 and SCICOM plans for future science delivery. The primary purposes of the report are to update Council on the scope, scale and impact of ICES science, implementation of the ICES Science Plan and the work of SCICOM.

The report covers activities in the steering groups, expert groups, strategic initiatives, operational groups as well as the implementation of the ICES Science Plan and progress by SCICOM in relation to the SCICOM work plan. It also summarises ICES contributions to co-sponsored conferences, training courses and publications. It normally also reports on the outcomes of the Annual Science Conference (ASC). However, due to the COVID-19 pandemic, the 2020 ASC had to be postponed to 2021.

### **2.2 Role of the Science Committee**

The Science Committee is the main scientific body in ICES and is ultimately responsible for the scope, scale and impact of ICES science. SCICOM works with the ICES community to set the direction for ICES science and to implement and monitor the ICES science plan. Through planning of the work of ICES groups, the science committee strives to ensure effective working relationships between all parties contributing to the implementation of the ICES Science Plan. SCICOM is empowered to speak on behalf of ICES on science priorities and strategies, and on the state of knowledge of topical marine



issues. The empowerment is provided by national representation from member countries. SCICOM has the authority to establish and dissolve expert groups and subordinate governance bodies (strategic initiatives, operational groups) as deemed necessary to deliver the ICES Science Plan.

The general objectives of SCICOM are:

- (1) To keep the science programme dynamic, internationally relevant, and impactful
- (2) To ensure seamless links between science, data and advice
- (3) To engage with scientists in ICES member countries and beyond by planning an annual cycle of meetings and workshops as well as the Annual Science Conference

The current priorities for SCICOM are to:

- (1) identify and promote science priorities within a science programme that is dynamic, internationally relevant and impactful, while fully taking account of national needs and providing added value to national programmes,
- (2) collate information on ICES science outputs in accessible and searchable formats, to develop and publicise metrics of impact, and to ensure expert group outputs acknowledge ICES contributions,
- (3) develop and regularly update website text relating to science, SCICOM, steering groups and personnel to increase awareness, visibility and impact of our people and work,
- (4) develop and run an engaging training programme that achieves cost recovery and enables participants to develop their careers, broaden their knowledge base, widen their professional network and add value nationally,
- (5) promote and support frequent and effective communication between expert groups, steering groups and SCICOM to increase network engagement and efficiency in all activities relevant to SCICOM,
- (6) promote science activity and collaboration within and beyond the ICES network,
- (7) ensure effective communication and seamless links between science, data collection, storage and processing, and advice.

SCICOM's previous role in leading the developments of ICES viewpoints has now been taken on by ACOM vice-chairs, with the agreement of ACOM and SCICOM.

## **2.3 Summary of Science Committee scientific and operational structures**

Four types of groups contribute to the work of SCICOM and have roles in implementing ICES Science Plan. Other temporary groups are also formed to develop content for conferences and symposia and to address other transient actions. In addition, SCICOM is supported by the ICES secretariat Science Support.

The following descriptions of groups are also made available in the 'Guidelines for ICES groups' to help broaden community understanding of the ways in which different groups can, and do, contribute to delivery of ICES science. The Advisory Committee, the Data Centre and the ICES community also play vital roles in delivering science and implementing the Science Plan, but working in roles alongside SCICOM. Their roles are documented in the science implementation plan.

### **Expert groups**

Expert groups (EG) are groups of scientists who collaborate during scheduled meetings, and often intersessionally, to advance understanding of marine systems by tackling fundamental and applied scientific questions and developing analyses that underpin state-of-the-art advice on meeting conservation, management, and sustainability goals. The questions they address are defined by terms of reference that are reviewed and signed off by the science and advisory committees. Expert groups publish the outputs of their work in the series “ICES Scientific Reports”.

### **Steering groups**

Steering groups (SG) address broad and enduring areas of science and advice and “parent” a number of expert groups. They are responsible for guiding and supporting expert groups and helping to ensure their work is effectively coordinated, conducted and reported.

### **Operational groups**

These groups develop ICES capability in areas beyond the remit of expert groups. Currently ICES has three operational groups: Data and Information Group (DIG), Science Impact and Publication Group (SIPG) and Training Group (TG).

#### *Data and Information Group*

The Data and Information Group (DIG) is an operational group reporting to the Science Committee that advises on all aspects of data management, including data policy, data strategy, data quality, technical issues, and user-oriented guidance. Their work is closely coordinated with the ICES Data Centre and helps to ensure that expert groups have access to data and the support for data handling that is essential to their work.

#### *Science Impact and Publication Group*

The Science Impact and Publication Group (SIPG) is an operational group reporting to the Science Committee that coordinates and supports the publication and dissemination of research conducted under the auspices of ICES. The group is responsible for guiding, monitoring, and sharing ICES publication output and increasing the reach and impact of ICES publications.

#### *Training Group*

The Training Group (TG) is an operational group reporting to the Science Committee that develops the structure and content of ICES training programme and then guides and supports the provision of training.

**Strategic initiatives**

Strategic initiatives (SI) report to the science committee and develop and co-ordinate cross-cutting science that impacts and interacts with the science of many expert groups. They also focus on building science collaborations outside ICES member countries.

The Strategic Initiative on the Human Dimension (SIHD) aims to develop strategies to support the integration of social and economic sciences into ICES work.

The Strategic Initiative on Climate Change Impacts on Marine Ecosystems (SICCME) coordinates ICES science that seeks to understand, estimate and predict the impacts of climate change on marine ecosystems.

**ICES Secretariat**

The ICES secretariat provides essential secretarial, administrative, logistical, scientific, and data handling support to the preceding groups and ICES community in general. This facilitates effective planning of meetings, reporting and external communication.

### **3 COVID-19 pandemic effects on work**

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The COVID-19 pandemic had severe impacts on our scientific network. It affected not only the ability to carry out expert group meetings, but also on the ability to carry out scientific work within our member countries. The impacts were not equally distributed across the community. Young families and single mothers and fathers who had to take care of their kids during the different lock-down phases were especially challenged with the variable workload. The move from normal lecturing to online lecturing and the need for increased care for students and employees increased the pressure on our experts in academia. Finally, the lack of opportunities to present work at conferences and to network is likely to impact Early Career Scientists.

The immediate effect we were able to observe, and are able to evaluate, is the shift from physical meetings to online meetings. Almost all expert groups have been actively and successfully moving to online formats and working practices. Responses to the changes were quick, with 12 expert groups that were due to meet in person before the end of March, meeting remotely. Thirty-nine expert groups moved meetings online during March and April, with 18 completing meetings in March and 21 in April. In May, 19 of the scheduled meetings moved online and one was postponed until (probably) September. One additional expert group meeting held in May was the consequence of a postponement from March. In June, all 15 scheduled expert group meetings moved online. In July and August, we had an additional 5 groups and in September another 15 with remote meetings. Groups have also treated the current situation as an opportunity to develop more effective online working practices.

The Annual Science Conference (ASC) 2020 was postponed to 2021. The decision was made by ICES leadership, based on the COVID-19 global situation and the expectation that international travel and large gatherings of people would still be under considerable pressure. The postponed meeting will take place 6–9 September 2021, at Øksnehallen, in Copenhagen, Denmark, and we are developing ideas for allowing remote participation to the conference. In addition, all ICES sponsored symposia planned for 2020 have been postponed to 2021. It is still not clear if they can be carried out as planned and some organizing committees are already planning to run the meetings as hybrid events.

A full picture on the overall effects of the COVID-19 pandemic on ICES work is presented in Council meeting document CM 2020 Del-Doc\_2.2.2.

### **4 Science priorities, planning and delivery**

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#### **4.1 Science Plan and Science Plan implementation**

The ICES Science Plan “Marine ecosystem and sustainability science for the 2020s and beyond” describes the scientific priorities and goals of ICES, their rationale, and the science and other tasks to be undertaken to meet them. The Science Plan is a public document with an audience comprising the marine science community in ICES countries and beyond.

By successfully implementing the science plan ICES aims to generate ecosystem and sustainability science with a high and beneficial impact on society. The science conducted should therefore advance and shape understanding of marine ecosystems, improve assessments of the effects of human activities, improve observations of the seas

and oceans and provide evidence and solutions to support conservation and management. Supporting tasks aim to increase the visibility and impact of this science, provide a rewarding and efficient working environment, engage new scientists, increase training and networking opportunities, and strengthen collaboration with regional and global partners.

ICES science, as described in the Science Plan, is currently brigaded under seven priorities. These are used for mapping all ICES science activities to topics (e.g. expert group terms of reference, symposia, training courses) and for presenting ICES work and outputs (e.g. ICES 2018 Annual Report). The seven science priorities are:

### **1. Ecosystem science**

Advance and shape understanding of the structure, function and dynamics of marine ecosystems — to develop and vitalize marine science and underpin its applications

### **2. Impacts of human activities**

Measure and project the effects of human activities on ecosystems and ecosystem services — to elucidate present and future states of natural and social systems

### **3. Observation and exploration**

Monitor and explore the seas and oceans — to track changes in the environment and ecosystems and to identify resources for sustainable use and protection

### **4. Emerging techniques and technologies**

Develop, evaluate and harness new techniques and technologies — to advance knowledge of marine systems, inform management and increase scope and efficiency of monitoring

### **5. Seafood production**

Generate evidence and advice for management of wild-capture fisheries and aquaculture — to help sustain safe and sufficient seafood supplies

### **6. Conservation and management science**

Develop tools, knowledge and evidence for conservation and management — to provide more and better options to help managers set and meet objectives

### **7. Sea and society**

Evaluate contributions of the sea to livelihoods, cultural identities and recreation — to inform ecosystem status assessments, policy development, and management

There are still some challenges to ensure all expert groups are linking terms of reference to ICES Science Plan but this is being addressed across ICES with the introduction of a new and consistent style of resolution form that provides the capability to harvest data directly (in place of the existing and heterogeneous word documents) and ultimately the resolutions database. It is encouraging to see these developments, as they are leading to more consistency in our working practices with expert groups and helping to emphasise that the ICES Science Plan is for the whole of ICES and not just for SCICOM.

A separate implementation plan describes how ICES Science Plan is being implemented, how people and groups within ICES contribute to implementation, the tasks they undertake and how progress is measured and reported. Collectively, ICES Science

Plan and implementation plan guide the conduct and delivery of science in support of the vision and mission of ICES. The intended audience for the implementation plan are the people and groups in ICES who are involved in implementing, monitoring and reporting on implementation of ICES Science Plan, principally the members of the Science Committee and associated groups and the ICES Secretariat.

The implementation plan defines objectives and actions in seven areas.

1. Catalyse, shape, facilitate and promote marine science which has a high and beneficial impact on society and addresses all priorities identified in the science plan
2. Ensure expert groups have flexibility to innovate and explore new topics and encourage and support cross-cutting science activity
3. Increase the visibility of, and access to, our science, data and advice and recognise, promote and use the science outputs from expert groups
4. Provide an efficient, collaborative, respectful and rewarding working environment for all scientists, as well as the resources and infrastructure needed by ICES groups to develop and share knowledge and expertise
5. Provide more and better networking and training opportunities and encourage engagement of a new and emerging generation of scientists with ICES and expert groups
6. Exchange knowledge and expertise with regional and global partners through collaborative projects, networks and training: to shape and advance marine science and advice and meet joint scientific goals
7. Monitor and report on progress towards meeting the goals of the science plan

Specific actions supporting these objectives are tabulated in the implementation plan and responsibility for these actions is widely distributed throughout ICES community. For actions involving ICES Secretariat, the actions have been transposed to the joint work plan. This report to Council summarises progress with implementation using metrics described in the implementation plan, although some systems still need to be put in place to report some metrics.

## **4.2 Science collaboration, including symposia**

The Arctic Science Ministerial (ASM3) has been postponed to 8–9 May 2021 in Tokyo, Japan. ICES and PICES have jointly provided responses to the ASM3 survey on international collaboration and cooperation. Anne Christine Brusendorff, ICES General Secretary, will chair working group 3 – A Productive Ocean, as a part of the Arctic Regional Process for the UN Decade of Ocean Science for Sustainable Development 2020/2021.

Representatives of ICES and PICES have conducted regular remote meetings to discuss ongoing collaboration, including potential activities related to the UN Decade of Ocean Science, a joint ICES-PICES conference (2023, US), and the Early Career Scientists Conference (2022, CA). The group will be seeking formal status within their respective organizations, and aim to encourage broader participation from the ICES community.

ICES is currently a partner in 10 projects. The project Mission Atlantic had had a successful virtual kick-off meeting from the 30<sup>th</sup> of September to the 2<sup>nd</sup> of October 2020. Mission Atlantic is one of several HORIZON2020 projects with focus on Transatlantic cooperation through the Galway and Belem declarations.

In relation to ICES co-sponsored symposia, all symposia planned for 2020 have been postponed to 2021. This includes (i) the International Symposium on Plastics in the

Arctic and Sub-Arctic Region, which was scheduled for 21-23 April 2020 in Reykjavik, and has been postponed to 2-4 March 2021; (ii) the Marine Socio-Ecological Systems (MSEAS) Conference scheduled for 25-29 May 2020 in Yokohama, and now planned for 2021 (dates still being finalised); (iii) the World Fisheries Congress scheduled for 11-15 October 2020, and which will take place 20-24 September 2021; and (iv) the Oceans Past VIII which was held as a shorter online event (“Oceans Past IX” is now scheduled for 3-7 May 2021). For 2021 SCICOM also approved the Baltic Sea Science Congress 14-18 June and the ICES 4th Decadal Variability of the North Atlantic and its Marine Ecosystems: 2010-2019 26-28 October, and for 2022 the joint ICES/PICES/FAO International Symposium on Small Pelagic Fish: New Frontiers in Science for Sustainable Management. The review process in March 2021 will include the years 2022 and 2023 (a full list with details can be found in annex 3).

### **4.3 Interactions with Expert Groups**

Expert groups are at the heart of ICES, engage the largest proportion of scientists in our community, and are responsible for generating the majority of our science output, including the basis of ICES advice. For these reasons, it is essential to ensure their work is valued, highlighted and accessible, and that chairs are engaged with the ICES community and effectively supported by other ICES groups. Since the specific scientific foci and activities of our expert groups are described elsewhere in this report, this section focuses on cross-cutting actions and system modifications that are being used to engage and guide chairs and to strengthen the coordination and impact of expert groups and their science. One hundred and fifteen working groups, forty-five workshops and twenty benchmark workshops were active in 2020 (see Annex 1 and Annex 2).

#### **4.3.1 Engagement and guidance**

SCICOM is continuously working to improve the engagement with Expert Groups. Measures introduced in the last years have been the WGCHAIRS forum, and the extension of the WGCHAIRS meeting. The forum is used as a means to keep EG Chairs informed in a consistent way and to provide a platform for feedback.

The WGCHAIRS meeting continues to be a valuable event to foster exchange and communication both among expert group chairs, and between the chairs and SCICOM, ACOM and the secretariat. The 2020 meeting included agenda items on the development of new resolution forms, finding the right publication channel, drafting executive summaries for “ICES Scientific Reports”, highlighting and disseminating science, updating web texts for groups, science to advise, ecosystem and fisheries overviews, the recognition of and guidance for expert group chairs, and recruiting new members of groups. The latter topics were discussed in depth in sub groups.

Guidance for groups in general is given in the Expert group guidelines. This document is continuously updated and contains a thorough and complete set of guidelines for all aspects of EG work. However, general guidance for new chairs, updates on developments, and introduction to new procedures requires specific training for EG chairs. The ACOM and SCICOM chair will work with SG chairs, ACOM leadership, and Secretariat to establish an Expert Group Chairs Training Course to be run for the first time alongside the 2021 WGCHAIRS meeting.

ICES science continues to flourish and attract new participants to our expert groups. The measures taken over the last years seem to have had an effect, although a full analysis to provide evidence will not take place until earlier next year. This year has especially seen a large increase of participation in expert groups due to the ability to more

easily join groups remotely. A larger proportion of members participated in meetings and we saw an increase in new participants.

### **4.3.2 Reporting and self-evaluation**

The “ICES Scientific Reports” series is now in its second year. It has raised the profile of the scientific work of expert groups and increased the visibility of the experts within the groups. Considerable effort was made in 2020 to ensure that the executive summaries and reports were focused primarily on scientific content, and further attention to this will need to continue into 2021. The system of interim reports, scientific reports and business reports, which can be used depending on the output of the group, is flexible enough to cater to all needs, while harmonizing the process. In addition, the assignment of has facilitated better referencing of scientific reports in the broader scientific community.

The adoption of the e-evaluation process for fixed-term working groups has allowed the removal of a lot of process related content from the “ICES Scientific Reports” so they are focused on scientific content. The e-evaluations provide a more efficient way for the working groups to report participation, progress on their ToRs, and science highlights. These e-evaluations also provide the SG chairs, SCICOM and the Secretariat with a brief annual overview of the working groups and their plans for the following year. These documents provide sufficient information for the secretariat and steering group chairs to assess whether the working group is on track and to identify and rectify any concerns that need to be addressed. The completed e-evaluations are posted on the front page of the SCICOM SharePoint site, so they also provide a quick and straightforward way for SCICOM national and ex-officio members to evaluate the progress of the fixed-term working groups.

### **4.3.3 Expert Group recommendations**

The new system for recommendations, which requests groups to contact recipients of recommendations before submission and to allow only five recommendations per groups, has proven to be efficient. Increasing the frequency in which recommendations are reviewed to three times a year has increased responsiveness and kept the workload for each review meeting to a reasonable amount. As the system has just been introduced, a full evaluation cannot yet be made.

## **4.4 Raising Awareness of ICES Science**

An important aspect of the implementation of the ICES Science Plan is to raise awareness of the science conducted by ICES. Opportunities to raise awareness of science outputs have been increased by the adoption of a new report series, with an ISSN for the publication of expert group reports, the creation of a preliminary web-based and searchable ICES bibliography (<http://ices.dk/publications/library/Pages/default.aspx>), and the adoption of a science highlights process to share science highlights with the communications team. Significant web material has been developed on ICES science, science symposia, and engaging with ICES.

The restructuring of the website has increased the visibility and accessibility of the different ICES areas, and it is now easier to find information on how to engage with ICES. The next steps will be to widen dissemination and complement the existing material with examples of how ICES works, and what science is conducted within the ICES member countries. This could for example be achieved through short videos.



#### **4.4.1 Science Highlights**

ICES Science Highlights is a short, focused series, published 2–3 times per year. Generally, five or more expert groups are involved in the series. Two upcoming series, “Technology and data science” is to be launched in early 2021, while “Future of aquaculture” is postponed to 2021. Topics for other Science Highlight topics are continuously being developed by SCICOM.

Two additional publication series, “Biodiversity” and “In other words”, will be starting in 2021. A proposed ongoing series in collaboration with SCICOM is “National perspectives on international cooperation with ICES”.

#### **4.5 Resolutions database**

Over the past few years, the ICES community, including SCICOM, ACOM, and Expert Group members, have asked for a more comprehensive overview of resolutions that is fully searchable and able to support broader reporting. As such, the Secretariat has been working closely with ACOM and SCICOM to develop a streamlined process for submission and tracking of resolutions. To date, the team has drafted updates of all resolution forms (expert groups, symposium, publications, and steering groups). We are currently finalizing the text of suggested examples on how to fill out these forms, which will be a helpful aid to the ICES community to ensure better consistency and completeness across the various resolutions. The new forms also ensure that the resolutions include text that is helpful for forming the searchable database on all fields, including clear identification of ecoregions relevant to each resolution, close links to other organisations, and science and advice priorities. The technical aspects of the database and the workflow have also been formulated over the past few months, and will still need some work as the database continues to be developed. The Secretariat is now working on upgrading Microsoft Dynamics, the software that will support the resolutions database, so it can be integrated with our existing expert group meetings database. Drafts of the online and offline forms have also been created for the symposium resolution, which we anticipate will be the first resolution rolled out for use in early December with the others to follow in 2021.

#### **4.6 Peer-reviewed publications linked to expert groups in 2019**

The secretariat is collecting all peer-reviewed publications, which are products from one of the expert groups and acknowledge the group and ICES. The database is updated regularly, but the full list for the calendar year is only available at the beginning of the following year. The 2020 list will be available as a document next year.

#### **4.7 Annual Science Conference 2020**

When the COVID-19 pandemic broke out in March 2020 the preparations for ICES ASC 2020 were well underway. The decision to postpone the ASC was made in April by ICES leadership, based on the COVID-19 global situation, and the expectation that international travel and large gatherings of people would still be under considerable pressure in September 2020. Most major preparations, commitments, and bookings for the ASC were kept and the ASC was shifted to 6 – 9 September 2021. This includes the venue contract, two out of the three previously confirmed keynote speakers, all 18 theme sessions and their conveners, submitted abstracts, and networking and social events. However, it is still unclear if travel can resume fully until September 2021 and we start to see discussions on reducing air travel therefore different options for a hybrid meeting is now considered.

The missing keynote was filled at the SCICOM September meeting 2020 and Yunne-Jai Shin (France) has accepted the invitation.

The ASC 2022 has been confirmed to take place in Ireland Monday 12 – Thursday 15 September 2022. Dublin Castle Conference Centre has been confirmed as the conference venue and has been booked from Sunday, 11 to Saturday 17 September 2022.

#### **4.8 Webinar**

The postponement of the ASC resulted in a gap in the yearly schedule of ICES and the ICES Bureau approved the decision to organize an ICES Webinar. “ICES reflections: Understanding the impacts of the COVID-19 pandemic on fisheries, markets, communities, and management” was held on 16 September 2020. The topic of the Webinar should reflect a topical subject and was to be inclusive and bring together as many participants as possible from ICES community. Thus, it was decided to develop a programme that would give a broad overview of how the COVID-19 pandemic has affected marine scientists across our member countries. ICES secretariat collaborated with the Strategic Initiative on the Human Dimension (SIHD) and the SCICOM and ACOM Chairs to develop this. The speakers were Alan Haynie (USA/SIHD Chair), Doug Lipton (USA), Cristina Pita (Portugal), and Marloes Kraan (The Netherlands). The Webinar attracted many from within the ICES community, but for about half of the participants, it was the first ICES event they attended. In total 718 people registered for the webinar and 418 logged on as it was live.

Being considerate about the resource requirement, the value of such events to communicate ICES science and activities is high. In addition, the postponement of almost all conferences this year has put especially Early Career Scientist in a situation, where they cannot present their work and develop their scientific network. We need to find ways to mitigate these challenges and Webinar-type of activities could be a way forward.

### **5 Steering Groups**

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#### **5.1 Overview**

Steering Groups address broad and enduring areas of science and advice and “parent” a number of expert groups. Following decisions taken by ACOM and SCICOM in 2018 there are now six Steering Groups that are responsible for guiding and supporting the work of all expert groups in ICES and helping to ensure their work is effectively coordinated, conducted and reported. With expert groups that were traditionally seen as ‘science’ or ‘advice’ all working within the same Steering Group structure, ACOM and SCICOM are further advancing towards a ‘one ICES’ approach to guiding expert group work and further strengthening links between science and advice. Practical examples of this are the contributions of many expert groups outside FRSG to the basis of advice, and regular ACOM reporting to SCICOM on science needs to support advice and on current and forthcoming special advice requests.

The following Steering Group reports introduce the purpose of each Steering Group, their terms of reference, working practices and progress in relation to the terms of reference during 2020. The reports also highlight the science being conducted in the groups and other issues relevant to implementation of the ICES Science Plan.

In 2020, the chair of the Aquaculture Steering Group (Mike Rust) took the option to extend his term by one year to the end of 2021.

## 5.2 Data Science and Technology SG (Incoming Chair; Jens Rasmussen, term starts in January 2021)

The Data Science and Technology Steering Group is responsible for guiding and supporting expert groups that are developing, assessing and applying new technologies as well as advancing data science, systems management, quality assurance and data governance.

### 5.2.1 Introduction

Topics covered include:

- Increasing the representation, profile and application of new technologies and data science in ICES
- Ensuring the ICES community evaluates and, where relevant, adopts new methods, systems and devices
- Assessing implications of new and emerging technologies
- Supporting continued improvements in monitoring through application of innovative technologies and optimization of sampling designs
- Supporting and advancing effective data governance, data management, analytics and quality assurance methods

## 5.3 Aquaculture SG (Mike Rust, USA, term started in June 2017)

### 5.3.1 Introduction

The Aquaculture Steering Group (ASG) is responsible for guiding and supporting expert groups that are working on science and advisory topics contributing to the sustainable development of aquaculture.

Topics covered include:

- evaluating the social and economic dimensions of aquaculture operations
- types, transmission and prevalence of diseases affecting cultured species and actions that can be taken to address them
- understanding positive and negative environmental impacts of aquaculture, approaches to monitor and mitigate them and methods of aquaculture risk assessment
- carrying capacity and relative efficiencies of alternate aquaculture systems
- genetics of cultured species, and application of molecular techniques to aquaculture questions
- projecting the future development of aquaculture and its implications for the food system and food security

### 5.3.2 Summary of progress in relation to Terms of Reference

Terms of Reference	Progress
ToR a) Engage with and work with Chairs of EG to ensure that EG work supports and meets the science objectives and advisory needs of ICES	Worked with Chairs one on one. 2x ASG web meetings and webinar series
ToR b) Help EG formulate and prepare their draft terms of reference and resolutions	Three groups reforming this year
ToR c) Review and report on the science being undertaken within EG to SCICOM, with a focus on identifying	This report and meeting

science highlights and priorities and demonstrating the impact of their science	
<b>ToR d) Review scientific products/deliverables of the EG and provide feedback on ways to improve the impact and influence of their work</b>	On-going as WG meetings occur. Exploring linkages to other organizations which are in need of scientific inputs such as FAO and OIE. Increased focus on advice deliverables.
<b>ToR e) Provide feedback to SCICOM on research priorities and implementation of ICES strategy</b>	Seven EGs are now functional to implement ICES Strategy. Focus will be on the science to advice linkage. Trying to add additional groups as appropriate chairs are found. Groups would include: Vulnerabilities and resilience of aquaculture to climate change Aquaculture Oceanography and Modelling Operationalizing Economic and Social Trade-off Analysis Aquaculture Marine Spatial Analysis Engineering and Technical Risk in Aquaculture
<b>ToR f) Identify shortfalls in skills and knowledge needed to achieve ICES objectives within the SGs area and work within the SG and through SCICOM and operational groups to develop capability</b>	Conducted a survey and proposing one or more workshops to articulate process and needs for aquaculture advice products. That effort may identify gaps in ICES ASG. Also a ToR of several WGs. COVID has made this process difficult. See list above for shortfall areas.
<b>ToR g) Identify gaps and overlaps in the work of EG, and propose consolidation, rationalization or forming of new EG to SCICOM as appropriate</b>	See above
<b>ToR h) Help EG Chairs to adopt practices which ensure scientific information generated by EG is receiving adequate quality control consistent with scientific norms</b>	On-going. Encouraging publication in peer-reviewed literature.
<b>ToR i) Facilitate active horizontal and vertical communication, collaboration and co-ordination between EG and all other relevant ICES groups and identify, in cooperation with EG Chairs, opportunities for internal and external collaboration</b>	We have had joint EG chair calls and meetings about 2x/yr. EG chairs from different groups were co-conveners at ASC 2018 and ASC 2019 and have published together. Members from WGSEDA are also actively interacting with the WGSOCIAL and WGECON to help ensure aquaculture is a part of these groups discussions. ASG webinar series to improve communication among EGs. WGOOA and WGECCA were planning on a joint meeting in May however that has been cancelled.
<b>ToR j) Represent the SG at SCICOM meetings and SCICOM/ACOM leadership meetings in spring and at the ASC</b>	This meeting
<b>ToR k) Establish a core group of ASG Expert Group Chairs who, together with the ASG Chair, will share responsibility for implementing the work of ASG</b>	Working with existing and new chairs to develop a coordinated SG with a common vision. Process is on-going, but I need to work harder on this.
<b>ToR l) Generate a position paper on the contribution of ASG to ICES science, data and advice</b>	Not started. Structure and text will follow an ecosystem approach to aquaculture and likely detail the work that is already proceeding in this area

### 5.3.3 Expert groups

The ASG expert groups are listed in Annex 2.

### 5.3.4 Science to advice

The main activity during the period of this report is to continue to advance the underlying science and define specific advice products for aquaculture. This would include three areas of advice, 1) Aquaculture Overviews, 2) Viewpoints and 3) Requested Advice. To this end ASG has worked with ACOM to:

- Retain a group of national level stakeholders to advise on the content and format of aquaculture advice products. Stakeholders are primarily regulatory experts who deal with aquaculture. This group was surveyed in the Winter 2020 to provide input into aquaculture overviews. This group is available to provide input to ASG products and research directions as requested
- Developed a path to define Aquaculture Overviews
  - Surveyed the Stakeholder group to help define “Aquaculture Overviews” Results informed contents of “Aquaculture Overviews”. Results are being written up.
  - Identified the first region to develop an “Aquaculture Overview” (Norwegian Sea) and developed an outline based on an Ecosystem Approach to Aquaculture.
- Developing the first Viewpoint for an aquaculture issue
  - Working with the Chairs of the Workshop on Emerging Mollusc Pathogens (WKEMOP – Chaired by Janet Whaley and Ryan Carnegie) on the production of a Viewpoint. Background scientific document in process.
  - Working with WSGENOTOOLS on a possible second Viewpoint.
  - Other WGs have expressed interest in Viewpoints but are not as far along. These include WGSPA, WGOOA and WGEIA.
- Setting a foundation for requested advice.
  - Working Group on Environmental Interactions of Aquaculture (WGEIA) will finish its term in 2020, but most members plan on continuing as the WG Environmental Risk Assessment for Aquaculture. They will turn toward comparing risk assessment approaches used by different ICES countries to inform management of aquaculture. This will likely become a key process for ICES to respond to requested advice products in the future. There will also likely be opportunities for ICES training in risk assessment methods in a year or two.
  - Option to use the National Level Stakeholders to help define additional products such as BMPs, Synthesis documents, Models and trade-off analysis.

### 5.3.5 Science highlights

The **Working Group on Scenario Planning on Aquaculture (WGSPA)** has published in ICES Journal of Marine Science a paper on blue growth targets and seafood demand estimates for the ICES region. The bottom line is that blue growth targets for increased seafood production from aquaculture are well below projected demand for the region. In other words, even if all European and North American domestic targets are met, the North Atlantic will not be able to meet its own seafood needs and will continue to have to increase imports from other regions. Implications for ICES sustainable seafood goal are obvious. The citation is:

Halley E. Froehlich, Jessica Couture, Lynne Falconer, Gesche Krause, James A Morris, Montse Perez, Grant D Stentiford, Harri Vehviläinen, Benjamin S Halpern, Mind the gap between

ICES nations' future seafood consumption and aquaculture production, ICES Journal of Marine Science, fsaa066, <https://doi.org/10.1093/icesjms/fsaa066>.

The **Working Group on Social and Economic Dimensions of Aquaculture** has two publications submitted and several in preparation. These include:

Krause, G., Billing, S.L., Dennis, J., Grant, J., Fanning, L., Filgueira, R., Miller, M., Pérez Agúndez, J.A., Stybel, N., Stead, S.M., Wawrzynski, W. (2020). Visualizing the social in aquaculture: How social dimension components illustrate the effects of aquaculture across geographic scales. *Marine Policy*, 118, <https://doi.org/10.1016/j.marpol.2020.103985>. <https://authors.elsevier.com/sd/article/S0308597X19307481>

Mikkelsen, E., Fanning, L., Kreiss, C.M., Billing, S.-L., John, D., Filgueira, R., Grant, J., Krause, G., Lipton, D., Miller, M., Perez, J., Stead, S., Villasante, S. Availability and usefulness of economic data on the effects of aquaculture: A North Atlantic comparative assessment. (currently in press with "Aquaculture Reviews").

### 5.3.6 Communication with EG

- **Developed a plan and best practices for virtual meetings.** The upside is that the SG chair will be able to attend more WG meetings.
- **ASG meetings.** Now having 2x/yr ASG meetings. Next web meeting is planned for October to develop a path forward.
- **Established a webinar series.** ASG has one webinar per month rotating among the chairs to introduce the activities of their WG. No Web meeting during September due to the ASM, nor July, August or December due to holidays leaving 8 months open. One for each WG plus an extra per year. Hoped to start in January 2020, however that has been delayed. New start in April or May.

### 5.3.7 Forward look

In addition to what has already been reported, ASG will continue to structure the steering group in order to define and support an Ecosystem Approach to Aquaculture Management. This will take multiple EGs interacting. This process started at ASC 2018 and continued it at ASC 2019 and into 2020. The ASG webinar series will be continued to foster cross-group understanding and to develop a common vision. However, ASG did not make as much progress on this following the ASC 19 as hoped.

WGEIA will finish in December 2020 but will refocus as a new group called Working Group on Environmental Risk Assessment for Aquaculture. Three other groups will turn over in spring 2021.

Despite preliminary discussion with Chairs of Strategic Initiative on Climate Change Impacts on Marine Ecosystems (SICCME) has taken place around the pros and cons of a WG on Aquaculture and Climate Change, the ASG Chair has yet to draft a strawman resolution.

Other ideas for new working groups include:

- Vulnerabilities and resilience of aquaculture to climate change
- Aquaculture Oceanography and Modelling
- Operationalizing Economic and Social Trade-off Analysis
- Aquaculture Marine Spatial Analysis
- Engineering and Technical Risk in Aquaculture

#### 5.4 Ecosystem Processes and Dynamics SG (Silvana Birchenough, term started January 2017)

The Ecosystem Processes and Dynamics Steering Group is responsible for guiding and supporting expert groups that study the state and resilience of marine ecosystems and food webs, as well as the life histories, diversity and interactions of component biota.

Topics covered include:

- oceanographic characteristics of marine systems and their influences on population, food web and ecosystem dynamics
- origins and transformations of matter in biogeochemical and production cycles.
- measuring, understanding, reporting and forecasting the dynamics of populations, food webs and ecosystems
- life histories, diversity and ecology of microbes, phytoplankton, zooplankton, benthic invertebrates, crustaceans and fish
- ecosystem services
- ecosystem resilience

As a result of COVID-19 restrictions, all EG meetings, discussions, planning and evaluation of ToRs have continued to be delivered online with some variations (e.g. meeting structure, timing, and delivery of outputs). Most of the science discussions and planning have continued to advance as agreed, with some delays.

##### 5.4.1 Summary of progress in relation to Terms of Reference

The overall EPDSG progress is summarised below in relation to the ToRs.

Terms of Reference	Progress
<b>ToR a) Engage with and work with Chairs of EG to ensure that EG work supports and meets the science objectives and advisory needs of ICES</b>	On track and ongoing, depending on requests-regular e-mails correspondence with EGs chairs to discuss and support production of deliverables (e.g. deadlines and production of annual reports, Self-evaluations documents, setting new ToRs) and agreeing work priorities. Active discussions with EG chairs on outputs and meeting formatting, to ensure there is a healthy balance during meetings.
<b>ToR b) Help EG formulate and prepare their draft terms of reference and resolutions</b>	On track-regular e-mail discussions with EGs chairs on ToR and deliverables associated with ICES priorities. Most EGs chairs are responsive to suggestions and revised documents are shared within short timeframes.
<b>ToR c) Review and report on the science being undertaken within EG to SCICOM, with a focus on identifying science highlights and priorities and demonstrating the impact of their science</b>	Ongoing- regular correspondence with EGs chairs to alert, inform on the recent products and highlights. A very active link with the ICES Communication department, Tweeter, and press releases opportunities to publicity scientific outputs. EPDSG actively have also engaged on the ICES Annual Report (developed an article on bioturbation), Biodiversity Highlight series and a special feature to cover COVID-19 effects and science, taking the position of EG chairs. Actively pursuing and drafting press release articles to show-case the new papers across the network.

Terms of Reference	Progress
<b>ToR d) Review scientific products/deliverables of the EG and provide feedback on ways to improve the impact and influence of their work</b>	Ongoing as needed regular feedback provided on annual reports, ToRs and Self-evaluation documents to improve visibility, influence and targeted activities. EPDSG chair helps to draft features, papers, and press releases.
<b>ToR e) Provide feedback to SCICOM on research priorities and implementation of ICES strategy</b>	<p>SG attended the SCICOM on-line meeting in March. The EPDSG chair also submitted an EOI for the UN decade Workshop in June, now moved to October. Regular correspondence with Simon Jennings, Jörn Smith and PICES on EGs issues, ToRs and science developments. EPD chair was also involved in discussions and suggestions for ICES TECH opportunities.</p> <p>EPDSG chair also chaired the recruitment panel for the new ICES SCICOM Chair. His role was to process, review and score EOIs, CVs, running interviews and evaluations of candidates to secure the new ICES SCICOM chair (from December 2019 to May 2020).</p>
<b>ToR f) Identify shortfalls in skills and knowledge needed to achieve ICES objectives within the SGs area and work within the SG and through SCICOM and operational groups to develop capability</b>	Ongoing- There are clearly more opportunities for integration between EGs across ongoing initiatives (e.g. Ecosystems overview), joint open sessions, viewpoints and dedicated, helping to generate new viewpoints publications (across common topics of interest). Also assessing Technologies aspects and opportunities to integrate data and technology at ICES via sub-group discussions.
<b>ToR g) Identify gaps and overlaps in the work of EG, and propose consolidation, rationalization or forming of new EG to SCICOM as appropriate</b>	Ongoing- new ideas to integrate with Aquaculture SG and EPD SG, still to be discussed. Potential ideas contribute with ecosystems overview aspects on processes and functions.
<b>ToR h) Help EG Chairs to adopt practices which ensure scientific information generated by EG is receiving adequate quality control consistent with scientific norms</b>	As requested by EGs- EPD chair helps EGs chairs with project proposals, support letters and ideas for new workshops. EPD chair invited to participate at the 4th Symposium on the Decadal Variability of the North Atlantic and its Marine Ecosystems: 2010-2019. EPDSG will be co-chair at the theme session focused on ecosystems and human dimension. EPDSG engaged in planning, keynote ideas and structuring the session.
<b>ToR i) Facilitate active horizontal and vertical communication, collaboration and co-ordination between EG and all other relevant ICES groups and identify, in cooperation with EG Chairs, opportunities for internal and external collaboration</b>	Ongoing with current and new EG chairs as requested. EPDSG chair liaising with PICES and EG chairs to support integration and collaboration.
<b>ToR j) Represent the SG at SCICOM meetings and SCICOM/ACOM leadership meetings in spring and at the ASC</b>	Done-SG participation at the on-line March meetings in 2020. EPDSG also chaired the evaluation panel for electing the new ICES SCICOM Chair. EPDSG also been actively discussing ideas and challenges with EG chairs.
<b>ToR k) Establish a core group of EPDSG Expert Group chairs who, together with the EPDSG Chair, will</b>	On track-several EGs Chairs are active and engage on dedicated requests, correspondence, and feedback. A



Terms of Reference	Progress
share responsibility for implementing the work of EPDSG	good network and support in place. An EPDSG meeting is scheduled online for October 2020.
ToR 1) Generate a position paper on the contribution of EPD to ICES science, data and advice	Discussions with Sara Bailey (HAPISG chair) to develop a joint opinion document between both EPD and HAPI chairs. An online discussion to discuss topics and complementary ideas was done in May 2020. Further discussions will continue intersessionally.

#### 5.4.2 Expert groups

The EPDSG expert groups are listed in Annex 2.

#### 5.4.3 Science highlights

##### WGHABD

- GlobalHAB Manual: Best Practice Guidelines for the study of HABs and Climate Change (under review);
- The IOC GlobalHAB Status report is nearly completed and will be finished at the end of this year;
- Currently a special issue of Harmful Algae is in production containing regional summaries of HABs and HAB impacts. There are currently five manuscripts from WGHABD members in this issue;
- ICES-IOC Harmful Algal Status Report will be submitted by the end of October 2020.

##### WGSCALLOPS

- The ICES Workshop of Scallop Aging (WKSA) workshop was very successful;
- The first ever data call for scallop species (landings and effort) is out at present;
- The ICES team was acknowledged for supporting the call for data;
- The intention is to conduct a scallop stock assessment for the North East Irish Sea. This activity will involve multiple institutes working collaboratively and has never been done before for this species and area.

##### BEWG

- Birchenough, SNR and Degraer, S., (2020) [Science in support of ecologically sound decommissioning strategies for offshore man-made structures: taking stock of current knowledge and considering future challenges](https://doi.org/10.1093/icesjms/fsaa039). **ICES Journal of Marine Science**, Volume 77, Issue 3, May-June 2020, Pages 1075–1078, <https://doi.org/10.1093/icesjms/fsaa039>
- Greathead, C., Magni, P., Vanaverbeke, J., Buhl-Mortensen, L., Janas, U., Blomqvist, M., Craeymeersch, J., Dannheim, J., Darr, A., Degraer, S., Desroy, N., Donnay, A., Griffiths, Y., Guala, I., Guerin, L., Hinchin, H., Labruno, C., Reiss, H., Van Hoey, G., Birchenough, S.N.R. (2020) Exploring the use of a generic framework to illustrate the importance of benthic marine ecosystems to the effectiveness of MPAs. *Aquatic Conservation* <https://doi.org/10.1002/aqc.3401>

## WGZE

- Contributed to the Ecosystem assessment documents for Bay of Biscay and Iberian Coast Ecoregion and Celtic Sea;
- Contributed to the Zooplankton Status Report
- ICES JMS Theme Set planned entitled: “Marine zooplankton time series: essential tools to understand variability in productivity-determining processes in the oceans.” The deadline for contributions is on 15<sup>th</sup> March 2021.

## EUROBUS

- Uttieri, M., Aguzzi, L., Aiese Cigliano, R. et al. WGEUROBUS – Working Group “Towards a EUROpean OBServatory of the non-indigenous calanoid copepod *Pseudodiaptomus marinus*”. *Biol Invasions* 22, 885–906 (2020). <https://doi.org/10.1007/s10530-019-02174-8>

## WGGRIFY

- The proposal for PICES/ICES Working Group proposal was recommended for approval by the PICES Science Board at their April 2020 meeting and forwarded to the PICES Governing Council.
- The WGGRIFY co-chairs welcomed Dr. Shin-ichi (University of Tokyo) as a PICES-affiliated co-chair.
- Membership in WGGRIFY now includes members from China, Korea, Japan, and Russia in addition to EU countries, Canada and the US.
- The first meeting of WGGRIFY will take place via WebEx from September 7-10 and will consist of four 2-hour meetings.
- The aim of the meeting will be to introduce WGGRIFY members with the view to build a common understanding of the WGGRIFY TORs, and develop implementation plans for each of the TORs that will guide activities over the next 6 months.

### 5.4.4 EPDSG chair communication articles

- [To remove or not remove](#)
- [Decommissioned offshore man-made installations are the focus of the latest themed set of papers in ICES Journal of Marine Science](#)
- [Bioturbation paper](#)
- [Bioturbation article ICES Annual Report](#)
- [MPAs paper](#)
- [In Memoriam –Clare Greathead](#)

### 5.4.5 Communication with EG (summary paragraph of activities undertaken)

Most groups are progressing as per agreed ToRs. Their work is of good quality and the EPD chair supports as request by EG chairs. Discussions are often targeted to promote a better and active EGs integration and production of outputs. The recent communication with EGs chairs has highlighted the challenges associated from COVID-19 effects and not being able to hold face-to-face meetings. Online meetings have been useful, but there has been a lack of engagement from some members and the face-to-

face interaction has been highlighted as an issue to support science discussions (e.g. papers and proposals).

#### **5.4.6 Summary of new EG proposals and EG closing**

- WGOOFE- ToRs under review, online meeting planned for October 2020. EPDSG invited to participate.
- WGONCE- ToRs being drafted and under discussions with PICES. EPDSG chair engaged and advising on content.

#### **5.4.7 Forward look (including actions for SG and SCICOM/ ACOM)**

Several activities planned for the EPDSG chair:

- Continue to support new EG chairs (e.g. **ICES/PICES Working Group on Small Pelagic Fish (WGSPF)**, **Working Group on Impacts of Warming on Growth Rates and Fisheries Yields (WGGRFY)** and our ongoing collaboration between ICES and PICES;
- Actively discuss with EGs Chairs what ICES Data have and what could be a potential additional data-driven science outputs to support the ICES research;
- Continue to liaise with ICES communication centre to ensure EGs outputs are disseminated accordingly,
- To represent ICES EPDSG at the forthcoming Regional Arctic Ocean Decade Workshops (October) - UN Decade of Ocean Science for Sustainable Development (2021-2030);
- To contribute with the developing of Biodiversity highlights as ICES Science topic (EPD EGs will contribute to this piece);
- To support and disseminate the work under ICES/IOC Harmful Algal Event Status report;
- Drafting a resolution to develop a TIMES publication to disseminate methods from benthic monitoring and applications of E-DNA. This work is developed under the project GEANS and funded under the INTERREG Programme (<https://northsearegion.eu/geans/>);
- EPDSG drafting an article in collaboration with the ICES communication team to showcase the challenges associated with COVID-19 and scientific meetings (<https://www.ices.dk/news-and-events/news-archive/news/Pages/Covid19science.aspx>);
- EPDSG participating at the "Decadal Variability of the North Atlantic and its Marine Ecosystems: 2010-20192 (October 26-28, 2021 in Bergen) as a co-chair for the theme session focused on ecosystems and human dimensions.
- EPDSG EG meeting scheduled for 26 October 2020.

## 5.5 Human Activities, Pressures and Impacts SG (Sarah Bailey, term started January 2019)

### 5.5.1 Introduction

The Human Activities, Pressures, and Impacts Steering Group is responsible for guiding and supporting Expert Groups that seek to describe the diversity of pressures affecting marine ecosystems and the impacts that follow.

Topics covered include:

- describing and projecting trends in human pressures and impacts on marine ecosystems, including analysis of historical change
- understanding and quantifying multiple impacts of human activity on populations and ecosystems, and proposing options for mitigation
- prevalence and effects of contaminants, invasive species, shipping, noise, renewable energy, fishing, climate, acidification and habitat loss
- estimating the vulnerability of marine ecosystems to pressures and impacts, including risk assessment and identification of limits and thresholds
- developing indicators of pressure and impact and testing their role in management systems
- assessing human impacts on ecosystem goods and services and developing approaches to mitigate undesirable impacts

### 5.5.2 Summary of progress in relation to Terms of Reference

TERM OF REFERENCE	PROGRESS
<b>ToR a) Engage with and work with Chairs of EG, SCICOM and ACOM to enable and support EG contributions to both the science objectives and advisory needs of ICES</b>	Routine correspondence with EG chairs and with the ICES secretariat to support production of text and deliverables (e.g. production of annual reports, self-evaluations, setting new ToRs) as needed. Attendance at ACOM leadership meeting in Jan 2020 to discuss more integration of HAPI EGs with advisory activities (e.g. adding shipping to Ecosystem Overviews, viewpoint contributions). Discussions with EG Chairs at ASC 2019, although few HAPI EG Chairs were in attendance. Co-convenor for Contributed Theme Session at ASC 2020/2021. Circulation of HAPISG Report for information and feedback.
<b>ToR b) Review and report on the science being undertaken within EG to SCICOM and ACOM, with a focus on identifying science highlights and priorities and demonstrating the impact of their science, including how science was used in ICES advice (method development, advisory products)</b>	Review of EG interim and final e-evaluations to identify science highlights and priorities. Addition of science highlights to e-evaluations will improve reporting. Working with ACOM vice-Chair to facilitate HAPI contributions to Viewpoints. Working with ICES Communications to facilitate HAPI contributions to 'In Other Words'. Regular reporting to SCICOM meetings in accordance with deadlines.
<b>ToR c) Provide feedback to SCICOM and ACOM on research priorities and implementation of ICES strategy</b>	Participation in all SCICOM meetings, with feedback provided during development of ICES science and advisory plans. Work ongoing to communicate priorities to HAPI EG Chairs and facilitate implementation of ICES Strategic Plan.
<b>ToR d) Identify shortfalls in expert availability, skills and knowledge needed to achieve ICES objectives within the SG area and work within the</b>	Support to WGSHP and WGOWDF during first term (getting EGs established and developing capacity in new strategic areas). Support to merger of MCWG and WGMS to address shortfalls in expert

SG and through SCICOM, ACOM, Strategic Initiatives and operational groups to develop capacity and capability	attendance at EG meetings.
ToR e) Identify gaps and overlaps in the work of EGs, and propose consolidation, rationalization or forming of new EGs to SCICOM and ACOM as appropriate	Have successfully supported establishment of new WGs: WGSHP and WGOWDF. Support to merger of MCWG and WGMS to address shortfalls in expert attendance at EG meetings. No other gaps or overlaps identified to date.
ToR f) Facilitate active horizontal and vertical communication, collaboration and co-ordination between EG and all other parts of ICES and identify, in cooperation with EG Chairs, opportunities for internal and external collaboration	Facilitated communication across EGs and between EGs and ICES Secretariat. Convened network session on global impacts of shipping with EPD Chair at ASC 2019. Participation in PICES Annual Science Meeting 2019 as co-Chair of joint ICES/PICES session on shipping. Facilitated interactions between WGSHP and the International Maritime Organization (IMO). Ongoing discussions about coordination of activities by WGBOSV and WGSHP at IMO with ACOM Chair.
ToR g) Help EG Chairs to adopt working practices which ensure scientific information generated by EG is receiving adequate quality control consistent with scientific norms	Encouraging publication in TIMES, Viewpoints and external peer-reviewed literature, as appropriate. Review of EG reports to ensure appropriate level of scientific (vs. administrative) content.
ToR h) Review EG reports and activities and, in dialogue with the SCICOM chair and ACOM leadership, provide feedback on ways to improve the impact, communication and influence of their work	Review of EG reports to provide feedback. Encouraging submissions of relevant work to IMO. Encouraging EG Chairs to make use of press releases for wider publicity of scientific outputs.
ToR i) Encourage EGs to come forward with proposals and initiatives for longer term science development in support of ICES advice	Communication with EG Chairs (WGEXT, WGML, WGBEC, WGSHP) to encourage proposals for new Viewpoints.
ToR j) Help EG Chairs to formulate and prepare their draft ToR and Resolutions for research-oriented work	Routine review of ToRs related to EG renewals, advisory requests and WK proposals.
ToR k) For advisory ToR: to work closely with the ICES secretariat, ACOM leadership and the EG chairs in preparing the research and advisory work plans for the upcoming year to ensure the advisory ToR are allocated to EGs and addressed adequately and within the advisory request timeframe	Business as usual. Support provided as requested.
ToR l) To give Special Requests received during the year immediate and rapid attention to inform the decision about whether or not the Special Request can be accepted and addressed	WGSFD received a special request in 2020 which was successfully addressed in close cooperation with advisory staff. ACOM legacy EGs within HAPISG are dealing with special requests monitored by Advisory program on a regular basis.
ToR m) To support the ICES Secretariat and/or the ACOM leadership in liaising directly with the Chairs of relevant EG when processing Special Requests	Support provided as required.
ToR n) Represent the SG in SCICOM and ACOM meetings, SCICOM/ACOM leadership meetings, WGCHAIRS and	Attendance at 2020 WGCHAIRS, ACOM Leadership meeting (Jan 2020), spring and fall SCICOM meetings. No ASC in 2020.

at the ASC	
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### 5.5.3 Expert groups

The HAPISG expert groups are listed in Annex 2.

### 5.5.4 Science Highlights

- Dannheim, *et al.* 2019. Benthic effects of offshore renewables: identification of knowledge gaps and urgently needed research. ICES J. Mar. Sci. 77:1092-1108. <https://doi.org/10.1093/icesjms/fsz018> (WGMBRED)
- Hassellöv, *et al.* 2020. ICES Viewpoint background document: Impact from exhaust gas cleaning systems (scrubbers) on the marine environment (Under Review). (WGSHP, with input from MCWG, WGMS)
- Le Pape, *et al.* 2020. The use and performance of survey-based pre-recruit abundance indices for possible inclusion in stock assessments of coastal dependent species. ICES J. Mar. Sci. <https://doi.org/10.1093/icesjms/fsaa051> (WGVHES)
- Tamburri, *et al.* 2020. Protocol for the Verification of Ballast Water Compliance Monitoring Devices. ICES TIMES 63. <http://doi.org/10.17895/ices.pub.5465> (WGBOSV)
- WGBEC completed a review on environmental risks of offshore oil and gas activities in the Arctic
- MCWG contribution to “In Other Words”: Marine Contaminants
- WGEXT proposal for publication of ‘*Marine Aggregate Extraction and the Marine Strategy Framework Directive: A review of existing research*’ as an ICES CRR
- WGEXT annual delivery of the dataset on the extraction of marine sediments in the OSPAR area (new web app in development)
- Development of Viewpoint on impact from exhaust gas cleaning systems (scrubbers) on the marine environment, and subsequent submission to IMO
- MCWG TIMES publication on chlorophyll a analysis is nearly complete

### 5.5.5 Communication with EGs (summary paragraph of activities undertaken)

Routine email communication by HAPISG Chair with EG Chairs to solicit contributions to Viewpoints, Science Highlights, and ‘In Other Words’, as well as to identify/facilitate linkages between EGs under HAPI as well as those under other steering groups. The EGs under HAPI have been actively working and achieving their proposed ToRs. There are no major issues on the work identified and delivered by the EGs, although there are delays with the submission of self-evaluations and final reports by some EGs.

### 5.5.6 Summary of new EG proposals and EG closing

EGs closing in 2020:

- Working Group on Methods for Estimating Discard Survival (WGMEDS)
- Workshop on Fish of Conservation and Bycatch Relevance (WKCOFIBYC)
- Workshop on fisheries Emergency Measures to minimize BYCatch of short-beaked common dolphins in the Bay of Biscay and harbor porpoise in the Baltic Sea (WKEMBYC)

EGs opening in 2020:

- No resolutions at current time, though proposals for new workshops are expected

#### 5.5.7 Forward look

- WGSHP participation at PAME II-2020 Shipping Experts Group (SEG) Pre-Meeting (17-18 September 2020) to develop linkages with the Arctic Council and PAME's shipping and other related work
- WGSHP, WGCEAM, WGOWDF to participate in IEASG meeting October 13-14, 2020
- HAPISG Virtual Meeting October 19, 2020
- WGSFDGOV to move from HAPISG to new Data Science and Technology Steering Group MCWG and WGMS propose to merge into new expert group after 2021
- WGML is supporting the International Symposium on Plastics in the Arctic and the sub-Arctic region (March 2021)
- Joint Theme Session at 2021 ASC on *The impacts of marine shipping and their effects on coastal communities and ecosystems* (WGBOSV and WGSHP)
- Theme Session at IUCN World Congress 2021, *Stopping the Tide: Best practices and solutions to tackle marine invasive alien species*, supported by WGBOSV and WGITMO
- WGOWDF planning ICES workshop to increase external engagement in order to improve understanding of the implications of offshore wind for fishing behaviour and fishing communities
- WGITMO and WGBOSV planning workshop on molecular tools for detection and monitoring of nonindigenous and harmful algal species (side event at International Conference for Marine Bioinvasions – postponed to 2022)

### 5.6 Integrated Ecosystem Assessments SG (Mette Skern-Mauritzen, term started January 2017)

This Steering Group is responsible for guiding and supporting Expert Groups that develop ecosystem modelling and assessment methods, contribute to state of the environment reporting and underpin guidance on meeting ecological, social and economic objectives.

Topics covered include:

- Development of integrated ecosystem assessments for the Arctic, Baltic, Barents, Celtic, North, northwest Atlantic and Norwegian seas, Greenland Sea and Northern Bering and Chukchi Seas
- Comparative analyses of marine ecosystems
- Ecosystem modelling
- Methods and application of ecosystem-based management and risk assessment
- Linking ecological, economic and social models and analyses to understand interactions and trade-offs between management objectives
- Defining data needs to support integrated ecosystem assessment
- Development of integrated advice to support ecosystem-based management

### 5.6.1 Summary of progress in relation to Terms of Reference

Terms of Reference	Progress
<b>ToR a) Engage with and work with Chairs of EG to ensure that EG work supports and meets the science objectives and advisory needs of ICES</b>	Since March 2020 the IEASG chair has engaged in defining EG ToRs, participated in EG meeting (WGINOSE), discussed EG output and reports with EG chairs and ICES Secretariat. The chair is organizing an IEASG meeting in October, with presentations from, and discussions with, the HAPISG EGs WGCEAM, WGSHP and WGMRE. The chair has also engaged in a proposal to EuroMarine on conceptual mapping methodologies to support transdisciplinary research and IEAs.
<b>ToR b) Help EG formulate and prepare their draft terms of reference and resolutions</b>	The IEASG chair has engaged in the drafting of ToRs for several EGs to be approved in 2020
<b>ToR c) Review and report on the science being undertaken within EG to SCICOM, with a focus on identifying science highlights and priorities and demonstrating the impact of their science</b>	The IEASG chair has communicated with EG chairs regarding science highlights. Some highlights are detailed below.
<b>ToR d) Review scientific products/deliverables of the EG and provide feedback on ways to improve the impact and influence of their work</b>	See above. The interest in collaboration between EGs is high, and IEASG meetings, workshops like WKINTRA, WKCONSERVE, WKTRANSPARENT, is crucial for cross EG collaboration and discussion to improve the scientific work and an effective uptake of new methods in EG work.
<b>ToR e) Provide feedback to SCICOM on research priorities and implementation of ICES strategy</b>	The IEASG chair will cochair WKTRANSPARENT to further develop the risk assessment framework used in the Ecosystem Overviews in April 2020, and is now well into the planning of this WK. The IEASG chair is also member of the subgroup developing the Ecosystem Advice Framework (EAF) in ICES, and involved in discussions under ACOM on i) ICES progress on EBM, a topic that will be discussed during ACOMs September meeting, and ii) the role of stakeholders in ICES, including the need for an ICES stakeholder Strategy.
<b>ToR f) Identify shortfalls in skills and knowledge needed to achieve ICES objectives within the SGs area and work within the SG and through SCICOM and operational groups to develop capability</b>	Within the IEASG, and with the support from SIHD, there are no major gaps in skills to address the IEASG objectives. The focus should be on bridging disciplines and EGs, and on communication with stakeholders to learn more about societal needs and priorities.  There is also a need for a better overview (or strategy, roadmap) of how the work in the different EGs and SGs support EBM implementation in ICES ecoregions, for both inhouse use for assessing progress and gaps, and for communication with stakeholders and clients.
<b>ToR g) Identify gaps and overlaps in the work of EG, and propose consolidation, rationalization or forming of new EG to SCICOM as appropriate</b>	There is limited overlap between the EGs. WGs are organized on topics of interest across groups. Also, with increasing focus on scoping for IEAs, there is more interactions with stakeholders. WGEAWESS has led a EuroMarine proposal on conceptual mapping, also useful approaches for stakeholder interactions.
<b>ToR h) Help EG Chairs to adopt practices which ensure scientific information generated by EG is</b>	See above.



Terms of Reference	Progress
<b>receiving adequate quality control consistent with scientific norms</b>	
<b>ToR i) Facilitate active horizontal and vertical communication, collaboration and co-ordination between EG and all other relevant ICES groups and identify, in cooperation with EG Chairs, opportunities for internal and external collaboration</b>	This ToR is addressed more or less continuously in discussions with EG chairs, and specifically during IEASG meetings and in supporting relevant WKS. EGs have also had back-to-back meetings to focus on shared interests and challenges. Several IEA EGs and the IEASG chair are involved in an EU-project on a whole-Atlantic IEA, and in the above mentioned EuroMarine proposal.
<b>ToR j) Represent the SG at SCICOM meetings and SCICOM/ACOM leadership meetings in spring and at the ASC</b>	The IEASG chair will participate in the 2020 SCICOM and leadership meetings in spring and autumn.
<b>ToR k) Map the EGs and their ToR against the information and data that ICES needs to deliver the Science Plan and its advisory work, suitably prioritized</b>	IEASG EGs are targeting key topics in the Science Plan, including i) developing <i>Ecosystem science</i> (assessing and reporting on trends in physical and biological systems; describing key links; methods development, comparative approaches), ii) assessing <i>Impacts of human activities</i> (e.g., distribution, intensity and impacts of pressures, separately and combined, vulnerability assessments, empirical and modelling approaches, Management strategy evaluations), iii) support multispecies and ecosystem considerations in <i>fisheries management and seafood production</i> (e.g., develop multispecies and ecosystem models to test fisheries management strategies, increased understanding of combined impacts of climate change, changing foodwebs and management, assess changing species spatial distributions and the role of emerging foodwebs for seafood production, link seafood production to societal indicators and explore interactions and tradeoffs), and finally iv) in supporting <i>Conservation and management science</i> (e.g., developing evidence base and assessment tools to support conservation and management, assess suitability and effectiveness of policies, provide evidence for setting policy objectives, develop and publish IEAs, develop ecosystem overviews).
<b>ToR l) Promote the development of the Regional Ecosystem Descriptions in standardized formats along the lines proposed by WKECOVER, and WKDECOVER. Propose additions and improvements to those guidelines in collaboration with constituent EG</b>	The IEASG chair cochaired WKECO3 on the next generation Ecosystem Overviews in spring 2019, and will cochaire WKTRANSPARENT in December 2020 on improving the risk assessment framework used in the EOs.
<b>ToR m) Promote the development of outline Integrated Ecosystem Assessments with the IEA EG. It is recognized that a variety of approaches to IEA exist, and different approaches will be appropriate to the different IEA EG based on skill sets and local conditions. IEASG will promote innovative approaches including using partial component based</b>	There is much focus on developing IEA methods; WKCONSERVE developed roadmaps for integration of socio-economic data and aspects in IEAs, WKINTRA and WGCERP are working on the use of time series data and indicators in IEAs. Several of the IEA WGs are increasingly focusing on ecosystem risk assessments of multiple impacts, and balancing impacts and benefits. The IEASG meeting in October will support discussions on how to include shipping and renewable energy as sectors in the IEAs, as well as discussions on approaches on cumulative impact assessments.

Terms of Reference	Progress
analyses, and use of combination quantitative and expert judgement approaches	
ToR n) Maintain a watching brief over initiatives in IEA in the wider community beyond ICES. This should include new approaches or methods for IEA, and broadening of the IEA concept to potentially include economic and social drivers and impacts	To follow-up a SCICOM action point, the IEASG chair is engaged in ongoing discussions with SIHD chairs and ACOM and SCICOM chairs on stakeholder interactions in ICES, with the aim of bringing IEA perspectives and needs into this process.
ToR o) Promote the development within EGs of standards and guidelines for good practice and Quality Assurance in the collation and use of data. This should extend to the maintenance of archived data used in the IEAs, and documentation of all the steps taken to arrive at a conclusion for a given IEA, and the possible involvement of the ICES Data centre	There is variable use of data from the Data Centre among the IEA groups, and this is a topic that needs to be followed up. It is a challenge for several IEA groups that data are stored nationally and not in the ICES data base. Adherence to TAF and quality assurance for product in the EOs is a push in the right direction.

### 5.6.2 Expert groups

The IEASG expert groups are listed in Annex 2.

### 5.6.3 Science highlights

**Solvang and Subbey (2019): An improved methodology for quantifying causality in complex ecological systems.** The paper develop statistical methodology for quantifying causality in complex dynamical systems, based on analysis of multidimensional time series data of the state variables (WGIBAR)

**Dalpadado *et al.* 2020. Climate effects on temporal and spatial dynamics of phytoplankton and zooplankton in the Barents Sea.** Warming continues to increase and borealize lower trophic production in the Barents Sea (WGIBAR)

**Eriksen *et al.* 2020. Diet and trophic structure of fishes in the Barents Sea: The Norwegian-Russian program “Year of stomachs” 2015 – Establishing a baseline.** During the “Barents Sea year of the stomach” 27,657 stomachs from 70 fish species were examined. The paper present a conceptual model of fish feeding relations, updating our knowledge about trophic structure and interactions, and providing a baseline for further investigations. (WGIBAR)

**Nakagawa *et al.* 2019. Integrating hawkes process- and biomass models to capture impulsive population dynamics.** The paper presents a modeling framework that captures the impulsive biomass dynamics (bust-boom) of a fish stock, using capelin in the Barents Sea as a case. (WGIBAR)

**Holm *et al.* 2019. Collaborative Research in Fisheries.** A book on the ongoing transition of fisheries governance, from top-down command and control towards a more transparent and participatory form. (WGMARS)

**Tzanatos *et al.* 2020. Mediterranean nekton traits: distribution, relationships and significance for marine ecology monitoring and management.** A trait-based assessment of the Mediterranean Sea at the level of population, community, ecosystem and landscape, in relation resilience of ecosystem functioning. (WGCOMEDA)

**Beukhof *et al.* 2019. Marine fish traits follow fast-slow continuum across oceans.** The paper investigate trait-environment relationships and project the trait composition of marine fish communities across the continental shelf seas of the Northern hemisphere. The results show

that traits related to growth, maturation and lifespan respond most strongly to the environment, with implications for projection of climate change responses. (WGCOMEDA)

**Hardison *et al.* 2019. A simulation study of trend detection methods for integrated ecosystem assessment.** The paper demonstrates that the ability to detect trends in time series is hampered by the influence of autocorrelated residuals in short series lengths. Results indicate biased rejection rates in the presence of even weak autocorrelation for series lengths often encountered in indicators developed for ecosystem-level reporting (N = 10, 20, 30). (WGNARS)

**Arneberg and Solvang (submitted). A method for warning signal identification in integrated ecosystem assessments by statistical time series modelling.** The paper presents a method to identify warming signals in time series, adopting a state space representation with the trend component is estimated by a Kalman filter algorithm. The algorithm obtains one- or more-years-ahead prediction values using all past information from the data, and observed values can be assessed whether they fall within prediction bands based on past trends or not. (WGINOR)

### **Communication with EG (summary paragraph of activities undertaken)**

See table above

#### **5.6.4 Summary of new EG proposals and EG closing**

None

#### **5.6.5 Forward look (including actions for SG and SCICOM/ ACOM)**

Key topics to IEASG but that also goes beyond IEASG:

- The development of an ICES stakeholder strategy that embraces both ACOM and SCICOM perspectives
- Improved integration across EGs, SGs, SCICOM and ACOM in an ICES strategy or roadmap to support the implementation of EBM in ICES regions.

### **5.7 Ecosystem Observation SG (Sven Kupschus, term started January 2017)**

#### **Introduction**

The Ecosystem Observation Steering Group is responsible for guiding and supporting expert groups that are meeting immediate data demands and contributing to the running and further development of effectively coordinated, integrated, quality assured, and cost-effective monitoring in the ICES region and beyond.

Topics covered include:

- Evaluating and optimising survey design to meet the needs of member countries and support advisory requests
- Design, planning and coordination of egg and larval, acoustic and trawl surveys
- Identifying and evaluating new technologies for observation and monitoring
- Advising on the design, deployment and efficiency of sampling methods and gears and the use of resulting data for assessment and advice
- Aging and estimating life history parameters of sampled fauna

- Developing monitoring to meet emerging data, science and advisory needs, with a focus on integrated ecosystem assessment and ecosystem-based management

### 5.7.1 Summary of progress in relation to Terms of Reference

Terms of Reference	Progress
a) Engage with and work with Chairs of EG, SCICOM and ACOM to enable and support EG contributions to both the science objectives and advisory needs of ICES;	General: Developed a structure for the future of EOSG and DSTSG through a consultation process with EG chairs and a workshop. The new structure specifically emphasises the need for direct contributions to the advisory processes and development of the science underlying such advice.
b) Review and report on the science being undertaken within EG to SCICOM and ACOM, with a focus on identifying science highlights and priorities and demonstrating the impact of their science, including how science was used in ICES advice (method development, advisory products);	At WGCHAIRS, the EOSG EG chairs suggested a science highlights series focused on advancements in technology. ICES Comms has recently agreed to work on this series, with timing related to the introduction of DSTSG in early 2021. Other science highlights are reported separately, but SG chair has been encouraging EGs to submit and develop new science and to report on existing science.
c) Provide feedback to SCICOM and ACOM on research priorities and implementation of ICES strategy;	EOSG Chair has reported on the need for the alignment between EOSG and the data users in FRSG and IEASG which is now being implemented. EOSG Chair has communicated with Johannes Karstensen on opportunities to collaborate on oceanography and ecosystem processes in terms of improving the basis of our science and the data collection. Additionally, EOSG Chair has discussed with SCICOM chair and Science PO some initial ideas for a session proposal for the Ocean Sciences Meeting 2022. EOSG Chair has developed better communication with RCGs and hopefully an effective way these groups, as well as other national data collection programs, can both feed into as well as contribute to improved science developments.
d) Identify shortfalls in expert availability, skills and knowledge needed to achieve ICES objectives within the SG area and work within the SG and through SCICOM, ACOM, Strategic Initiatives and operational groups to develop capacity and capability;	A lot of this has been on hold temporarily while clarifying the SG structure and objectives earlier in the year. We now have a much clearer understanding of the future needs and are following the suggestions from WKREO on seeding new groups with new skills to with the support from the RCGs (Maria Hansson) and ACOM (Lotte Worsøe Clausen).
e) Identify gaps and overlaps in the work of EGs, and propose consolidation, rationalization or forming of new EGs to SCICOM and ACOM as appropriate;	The EOSG strategy to both issues has been to develop joint workshops to facilitate the development and transfer of expertise across disciplines. Generally, EOSG has struggled in modelling and ecological areas of expertise
f) Facilitate active horizontal and vertical communication, collaboration and co-ordination between EG and all other parts of ICES and identify, in cooperation with EG Chairs, opportunities for internal and external collaboration;	EOSG Chair has encouraged the development of cross EG workshops and generally EOSG chairs have been very receptive of the approach particularly since the workshops generally provide additional support from the national institutes in terms of time which make the addressing of such wider issues more effective. EOSG Chair has also observed some exemplary coordination with regards to recommendations

Terms of Reference	Progress
	generally. Often now communication occurs between chairs before recommendations are formulated or at least a follow up is being initiated to explain the background to the recommendation. The recommendations database should aid the transition from when recommendations were merely a means of delegating tasks to other EGs.
<b>g) Help EG Chairs to adopt working practices which ensure scientific information generated by EG is receiving adequate quality control consistent with scientific norms;</b>	EOSG Chair has had little to do on this, generally EG chairs have taken on the role themselves and coupled with the standardised reporting this has been sufficient. EOSG Chair has assisted and reviewed some EG work on the request of some EG members and chairs but generally found that most EOSG work either adheres to scientific standards, or regresses are picked up by EG members. ACOM and the TIMES series editors also pick up ACOM ToR reviews and survey protocols which is a useful additional independent check.
<b>h) Review EG reports and activities and, in dialogue with the SCICOM chair and ACOM leadership, provide feedback on ways to improve the impact, communication and influence of their work;</b>	The communication on this topic is less than ideal. Focus of ACOM and SCICOM is not generally on data collection while EG groups focus more on the quality of their work than on the impact. Reviews of reports have predominantly focused on the word count of the executive summary and technical issues with the transition to “scientific reports”. EOSG Chair was a little surprised that an opportunity was missed to leverage the working knowledge of the survey expert group system as to likely impact of the COVID-19 on data collection. While the national data submitters certainly had the tabular information for their own surveys it was clear from talking to the EGs that a lot of cooperation communication and mitigation was being implemented than provided a more coherent picture of the likely impact on surveys.
<b>i) Encourage EGs to come forward with proposals and initiatives for longer term science development in support of ICES advice;</b>	While EOSG Chair has done this more on a personal plea-basis, for example WGFAST or WGSSSE, generally ToRs are already extensive to deal with the routine operations of data collection groups. Most groups now have some ToRs in this direction, but this is new territory for most EOSG groups and something they felt needed discussion and interactions which have suffered through webex meetings that are hopefully temporarily.
<b>j) Help EG Chairs to formulate and prepare their draft ToR and Resolutions for research-oriented work;</b>	EOSG Chair reviews all EG ToRs and provide detailed comments while also suggesting edits and changes to encourage more scientific advancement and adherence of the resolutions to ICES guidelines. EOSG Chair sees more active SCICOM input and encouragement necessary to ensure that EGs continue to provide national science and advisory priorities as the science plan appears to be too “general” to evaluate utility of the individual ToRs for the groups.
<b>k) For advisory ToR: to work closely with the ICES secretariat, ACOM leadership and the EG chairs in preparing the research and advisory work plans for the upcoming year to ensure the advisory ToR are allocated to EGs and addressed</b>	EOSG Chair has supported the development of ToRs for WKING, WGELECTRA, WKRBES-EST2 in conjunction with ACOM. He has contributed to additional EG ToRs outside of EOSG to ensure communication and to avoid duplication with existing groups.

Terms of Reference	Progress
<b>adequately and within the advisory request timeframe;</b>	
<b>l) To give Special Requests received during the year immediate and rapid attention to inform the decision about whether or not the Special Request can be accepted and addressed;</b>	Generally this task is handled by ACOM rather than the SG chair where requested I have contributed to the process, but this is generally an ad hoc procedure at the moment. I have not heard of any issues either from the EOSG chairs or ACOM, but note that communication is less than complete in the process.
<b>m) To support the ICES Secretariat and/or the ACOM leadership in liaising directly with the Chairs of relevant EG when processing Special Requests;</b>	See above.
<b>n) Represent the SG in SCICOM and ACOM meetings, SCICOM/ACOM leadership meetings, WGCHAIRS and at the ASC.</b>	Aside of this year's ASC which has been postponed, EOSG Chair has attended all meetings. Generally the FRSG chair and EOSG Chair are the only SG chairs attending the ACOM meetings.
<b>o) Developing more efficient and effective data collection through better integration and evaluation of existing ecosystem monitoring information and support implementation of new methods and technologies.</b>	Much of this work in the past has focused on technical elements of information we can collect. EOSG is now in position to provide better advice on what should be collected given new and emerging data needs through the development of new analytical methods, while DSTSG will tend to focus more on the how elements.
<b>p) Collaborating with Regional Co-ordination Groups and national data collectors to evaluate and optimise survey design to better meet the needs of member countries, support advisory requests, and aid ICES science development.</b>	The groundwork for this has been laid by WKREO and EOSG Chair will continue to work with ACOM and the RCGs on implementing ways in which RCGs and national data collectors can more effectively interact with data collectors at the international to ensure better evaluations of existing data collections and receive advice on data collection prioritisation.  WK user has already provided the start of a framework to help data collectors and users evaluate the existing collections and share the experiences across the data collectors beyond mere consistency of surveys.
<b>q) Developing monitoring to meet emerging data, science and advisory needs, with a regional focus on integrated ecosystem assessment and ecosystem-based management</b>	EG chairs and EOSG Chair have conducted an extensive consultation process as to how to progress from what is largely independent collection of different ecosystem components to a more integrated approach for the ecosystem approach.  Prioritisation and integration of the data collections are the next key steps for the new SG chair to take forward.
<b>r) Overseeing design, planning and coordination of egg and larval, acoustic and trawl surveys and development of publication of survey protocols</b>	EOSG Chair has contributed to discussions on future needs for several surveys and have worked closely with Ruth Andersen (ICES Editor) to transition the task of editing and publishing from SISPs to a special form of TIMES article. This will see more consistent formatting and content approaches and more rigorous attention to the readability of what is sure to continue to be an important ICES legacy document.  Overall 3 SISPs were published (two updates and one new) this year and one new manual from WGACEGG is in the process of becoming the first TIMES survey manual.

### 5.7.2 Expert groups

The EOSG expert groups is listed in Annex 2.

### 5.7.3 Science highlights

**WGNAEO** (January - report was not available in time for March SCICOM)

- This meeting was the first formal step in combining two surveys as a coordinated ecosystem survey. The ongoing spatial overlap for the two vessels will be the 5Zjm area, with the US survey continuing farther west (5YZ6) and the Canadian survey farther east (4VWX).
- Initially we will focus on the documentation of existing oceanographic monitoring conducted by DFO and NEFSC, later expanding to include monitoring efforts in the region by other organizations.

**WKUSER** (February, but report was not available in time for March SCICOM)

- Provided an outline for approaches to dealing with changes to surveys on different temporal scales and perspectives including a practical decision-making framework.
- Given the current covid-19 situation some of this work became relevant all too soon. Unfortunately, full use of the framework still requires better / more available monitoring evaluation tools and suggests such work should be undertaken routinely as part of monitoring work.

**WGIPS**

- A session was held at WGIPS 2020 to assess auxiliary pelagic ecosystem surveying techniques currently used on surveys coordinated by WGIPS. A new ToR was agreed in 2019 (ToR i) that auxiliary monitoring of ecosystem components will be presented in a separate session at WGIPS from the standard fishery survey results for the target species in 2020 and 2021.
- Issues with the ICES acoustic database repository were discussed amongst users and developers during the meeting and the intention to further consolidate both the software and the database as common tools to be used amongst all surveys coordinated within WGIPS was agreed.
- Exemplary communication with other WGs on recommendations (Michael O'Malley).

**WGFAST**

- Big meeting as usual with 100 participants, others had to view the meeting on-line.
- Topics discussed this year were acoustic backscatter models, the netCDF4 open source data format for acoustic data, a Python software package, Echoype, to read, process, and analyze acoustic data, and applications of artificial intelligence (AI) and machine learning (ML) to acoustic data.
- Michael Jech chair has been very conscious of the need to work across expert groups and has the support of EG.

**WGELECTRA**

- In this heated political arena, ICES WGELECTRA provided a platform for scientists to discuss their research and build on collaborative projects. Substantial efforts were invested during the last 10 years to examine the effect of

pulsed currents on individual level for a range of species, species groups and life stages.

- In their 2020 meeting, WGELECTRA produced a state-of-the-art review of the scientific knowledge. Effects of pulse trawling on marine organisms, populations and ecosystems are reviewed and compared to the conventional beam trawling. The report provides a solid scientific basis about the pros and cons of pulse trawls when exploiting the total allowable catch of sole to be used in decision making in the future.

#### **WGDG**

- A generic DATRAS format for submission has been agreed upon across surveys, after in-depth discussions in depth of its pros and cons. Implementation is scheduled for autumn 2020.

#### **WGACEGG**

- A manuscript on anchovy and sardine habitats in the European Atlantic Area based on WGACEGG grid maps series, already presented as a poster at ICES ASC 2019, will be submitted later in 2020, as TOR b deliverable.
- A joint meeting with the Mediterranean acoustic community (MEDIAS group) was organised in 2018, and included a training session on the acoustic data processing R package EchoR, to address TOR g.
- A manual, combining DEPM and acoustic surveys protocols, to be submitted to the Series of ICES Survey Protocols, allowed to further standardise methodologies in use in the WGACEGG community to address TORs g and i.

#### **IBTSWG**

- The developments of a new survey trawl were discussed. The two approaches led by Scotland and by Ireland joined in Nov/Dec 2019 on gear trials on board of the Scottish vessel Scotia. Successful fishing was done with both gears on shallow as well as deeper waters within the normal range of the NS-IBTS. The preliminary results indicate that the lighter Irish gear with a slightly higher net opening caught better the species in the water column like sprat, but the heavier Scottish gear caught better the bottom dwelling species. The trials indicated that both gears have good ground contact, do not dig in in shallower water, and seem more stable than the GOV.

#### **WGBEAM**

- The group managed to effectively address their ToR, noteworthy because they were one of the first groups to be effected by the lock-downs. With less than 7 days' notice all adjustments were made and the meeting proceeded, from 13 different households in 9 countries, locations varying from an institute's meeting room to a parent's guest room, kitchen, sleeping room, basement, home office or living room. Despite the unplanned and unforeseen circumstances, good progress on almost all tors has been made.

#### **5.7.4 Communication with EG**

EOSG Chair has communicated with a number of EG chairs during the development of resolutions and additions to new ToRs and attended some of the survey EGs by WebEx, something that has become a lot more natural with COVID-19 (one of the few things). EOSG Chair also took the opportunity to update groups on the outcome of WKREO and seek further input on discussion on the future of EOSG. Consequently,



the groundwork for the changes now approved by SCICOM to transfer many of the existing EGs from EOSG to the new DSTSG went very smoothly and people were well aware of the reasoning and the need.

EOSG plans for change and the need for better communication with advice users were discussed at WGCHAIRS in January 2020 in a subgroup meeting with FRSG. A presentation on the outcome of the consultation process within EOSG found good resonance with FRSG chairs opening a promising avenue for future collaboration between the EGs across the SGs. The new SG-structure now should facilitate this and it is hoped that the support and interest continues.

There is also an RCG initiative based on results from WKREO, which are being followed up together by EOSG Chair together with Lotte Worsøe Clausen. EG chairs have been involved in this and this is hoped to do more to set the groundwork for a new direction for EOSG.

Due to the recent pandemic extensive communication with EG chairs has been necessary to ensure the data availability and assuring the quality for advisory processes. Despite the significant disruption, EOSG was able to report on the likely key impact on advice in a very short time and the SG thanks in no small part to the responsiveness of EG chairs pulling together in a tough situation and had drawn up contingency plans proactively.

#### **5.7.5 Summary of new EG proposals and EG closings since March**

##### **New working groups and workshops:**

- WKOISS – Workshop on Operational Implementation of Stomach Sampling
- WKING – Workshop on Innovative Fishing Gear (EU special request linked to WGFTFB)
- WKBIOPTIM4 - The Fourth Workshop on Optimization of Biological Sampling
- WKRDB-POP2 - The Second Workshop on Populating the RDBES data model
- WGAcousticGov - Working Group on the Acoustic Trawl Data Portal Governance
- WKABM - Workshop on Acoustic Backscatter Models
- WGSSE - Working Group on Size and Species Selection Experiments (in preparation)

##### **New resolutions for existing groups:**

- WGBEAM – Working Group on Beam Trawl Surveys (new resolution)
- WGRFS – Working Group on Recreational Fisheries Surveys (new resolution)
- WGACEGG- Working Group on Acoustic and Egg Surveys for small pelagic fish (new resolution, shortened name)
- WGCATCH - Working Group on Commercial Catches (in preparation)

#### **5.7.6 Dissolved working groups:**

PGDATA has been dissolved in its current form and will be resurrected as WGQUALITY under DSTSG due to its now closer ties with the TAF process

Shift of some EOSG expert groups to DSTSG:

Roughly half of the EGs under EOSG are moving to the new DSTSG in January 2021, predominantly those involved in quality assurance and technological development. The groups are aware and positive about the move. Details of arrangements and associated operational changes will be made available soon.

#### Groups with focus on technology

WGTFD	Working Group on Technology Integration for Fishery-Dependent Data	EOSG
WGFAT	Working Group on Fisheries Acoustics, Science and Technology	EOSG
WGMLEARN	Working group on machine learning in marine science	EOSG

#### Groups with focus on data

WGSMT	Working Group on SmartDots Governance	EOSG
WGDG	Working Group on DATRAS Governance	EOSG
WGACOUSTICGOV	Working Group on Acoustic Data Governance	EOSG
SCRDB	Steering Committee of Regional Fisheries Data Base	EOSG
WGALES	Working Group on Atlantic Fish Larvae and Eggs Surveys	EOSG
WGBIOP	Working Group on Biological Parameters	EOSG
WGCATCH	Working Group on Commercial Catches	EOSG
WGRFS	Working Group on Recreational Fisheries Surveys	EOSG

#### 5.7.7 Forward look (including actions for SG and SCICOM/ ACOM)

The outlook for EOSG has changed significantly with SCICOM approval for the new Data Science and Technology Steering Group (DSTSG); the Ecosystem Observation Steering Group thanks SCICOM and ACOM for their support during the process. The transition phase will be managed by the current and newly elected EOSG chairs, but full implementation will take longer, and the handover between steering group chairs is critical to the success. The new SCICOM Chair has been an integral part of this process and a good sounding board for ideas in his former role as SCICOM member and will enable a smooth transition from merely everything to do with data collection, to an integrated element of the community is structurally facilitated.

Focus for the rest of the year will be on:

- Continue the dialog with data users on how to help drive ICES science forward by looking across data collections within regions to consider ecosystem processes relevant to management.

- Explore practical options for implementation of the fisheries independent monitoring groups to seek establishment of more analytically focused groups in EOSG than are more closely aligned with the data users.
- Develop the dialog with RCGs and the national laboratories on how EOSG can support their needs for better evaluation tools for data collection to improve efficiency and scope of the monitoring.
- Work with DSTSG and its groups to maintain and improve data delivery and data standards as well as developing new analytical and technical solution to data collection.

There is still a perception in the ICES network that data collection is an important, but independent task from science/advice. Much of the SG chairs work and experiences, including collaboration with EG chairs, suggest this is an outdated and rather unhelpful perspective. Those advisory EGs that have close ties to their respective data collection EGs (HAWG, WGWIDE) operate on an interactive/cyclical basis actively interacting through participation of data collectors at the advisory meetings. In demersal advisory EGs, communication has mostly focused on passive (reports / assumptions) which has led to an undesirable isolation of data collection from the rest of the community with negative impacts on the quality of the advice. To more fully realise the potential of the ICES network as a whole, a closer focus on the work of these groups and the multidisciplinary skills needs of these groups is needed.

## 5.8 Fisheries Resources SG (Patrick Lynch, term started February 2019)

### 5.8.1 Introduction

The Fisheries Resources Steering Group (FRSG) is responsible for guiding and supporting expert groups that are working on advisory-related and science topics contributing to the management of wild-capture fisheries.

Topics covered include:

- single-species and multi-species stock assessment, including data-limited methods.
- management strategy evaluations, addressing uncertainty, and improving the transparency, robustness, efficiency and repeatability of stock assessment
- operationalisation of ecosystem-based fishery management and maximum sustainable yield concepts and their application in mixed, multispecies and emerging fisheries
- fisheries spatial dynamics, mixed fishery interactions and responses to management measures

### 5.8.2 Summary of progress in relation to Terms of Reference

Terms of Reference	Progress
a) Engage with and work with Chairs of EG, SCICOM and ACOM to enable and support EG contributions to both the science objectives and advisory needs of ICES;	Ongoing via remote correspondence, an in-person meeting during WGCHAIRS in 2020, and attendance/participation in ACOM and SCICOM meetings and activities throughout the year.
b) Review and report on the science being undertaken within EG to SCICOM and ACOM, with a focus on identifying science highlights and priorities and demonstrating the impact of their science, including how	Ongoing through this report, participation at ACOM, SCICOM, and FRSG meetings, working with the Secretariat, as well as the EG summary table on SharePoint.

Terms of Reference	Progress
science was used in ICES advice (method development, advisory products);	
c) Provide feedback to SCICOM and ACOM on research priorities and implementation of ICES strategy;	Ongoing via collection of research priorities on FRSG SharePoint site and reporting at ACOM and SCICOM.
d) Identify shortfalls in expert availability, skills and knowledge needed to achieve ICES objectives within the SG area and work within the SG and through SCICOM, ACOM, Strategic Initiatives and operational groups to develop capacity and capability;	This discussion was initiated at the 2020 WGCHAIRS meeting through plenary discussions and a breakout discussion with the SG. FRSG reports capture capacity gaps that apply to most, if not all, EGs. Capitalizing on efficiencies learned through the COVID pandemic may be one way to address capacity limitations.
e) Identify gaps and overlaps in the work of EGs, and propose consolidation, rationalization or forming of new EGs to SCICOM and ACOM as appropriate;	At this point, consolidation, rationalization, or forming new EGs has not been identified as a priority.
f) Facilitate active horizontal and vertical communication, collaboration and co-ordination between EG and all other parts of ICES and identify, in cooperation with EG Chairs, opportunities for internal and external collaboration;	Communication throughout the ICES community occurs via regular operations (remote correspondence, meetings, etc.).
g) Help EG Chairs to adopt working practices which ensure scientific information generated by EG is receiving adequate quality control consistent with scientific norms;	Ongoing via working with ACOM and the ICES Secretariat on quality control policies. FRSG products are generally subject to a high level of quality control and quality assurance.
h) Review EG reports and activities and, in dialogue with the SCICOM chair and ACOM leadership, provide feedback on ways to improve the impact, communication and influence of their work;	Ongoing, largely through review and discussion of EG activities and products in close communication with ACOM Leadership.
i) Encourage EGs to come forward with proposals and initiatives for longer term science development in support of ICES advice;	EGs have been encouraged via in-person meetings and identification of strategic directions for ICES. These directions have been ranked and communicated to ICES. FRSG is tentatively planning a meeting focused on strategic directions for stock assessments.
j) Help EG Chairs to formulate and prepare their draft ToR and Resolutions for research-oriented work;	Ongoing with FRSG review occurring prior to submission to ACOM or SCICOM.
k) For advisory ToR: to work closely with the ICES secretariat, ACOM leadership and the EG chairs in preparing the research and advisory work plans for the upcoming year to ensure the advisory ToR are allocated to EGs and addressed adequately and within the advisory request timeframe;	Ongoing via routine coordination with the Secretariat and ACOM/ACOM Leadership.
l) To give Special Requests received during the year immediate and rapid attention to inform the decision about whether or not the Special Request can be accepted and addressed;	Ongoing as Special Requests are received. Also, EG chairs have expressed concern over being able to address all special requests, and are encouraged to decline when there is not sufficient capacity to appropriately respond to the request.
m) To support the ICES Secretariat and/or the	This has been facilitated particularly through

Terms of Reference	Progress
ACOM leadership in liaising directly with the Chairs of relevant EG when processing Special Requests;	WGCHAIRS, but there is also regular remote dialogue between EG Chairs, ACOM Leadership, and the FRSG Chair.
n) Represent the SG in SCICOM and ACOM meetings, SCICOM/ACOM leadership meetings, WGCHAIRS and at the ASC.	Ongoing with participation and presentations at all stated meetings, and continued plans to do so.
o) Represent fisheries assessment and management science in SCICOM and ACOM and work with other SG Chairs and Chairs of EGs to ensure that ICES maintains active and impactful research on these topics.	Ongoing via participation in SCICOM, ACOM, ACOM Leadership, and communication within the SG.
p) Ensure that the development of ICES science is informed by knowledge of current and emerging advisory needs.	Ongoing through communication of advisory needs and priorities via regular presentations to SCICOM.
q) Provide feedback to ACOM and advisory services to ensure they are well informed of current and emerging science with potential to meet their needs.	Ongoing through regular participation and presentations to ACOM and ACOM Leadership.
r) Provide feedback to SCICOM and research-oriented groups to ensure they are well-informed of developments in advisory request with potential to meet their needs.	Ongoing via this report and participation in SCICOM meetings and participation at the ASC. The FRSG is coordinating within the ICES community on sessions at the ASC as well as proposed workshops and working group activities.
s) Contribute to the development of an ICES culture where other SGs and all EGs better understand advisory needs and have the potential to support advice.	Ongoing through collaboration with other SG chairs and communication within FRSG in coordination with ACOM/ACOM Leadership. The FRSG Chair continues to contribute to new ICES initiatives and activities, such as the formation of a new Data Science and Technology Steering Group, TAF Governance, and others.
t) Work with ACOM leadership to review suggestions from EG for benchmark processes and present to ACOM and SCICOM an annual plan for benchmark processes for the coming three years.	Following recommendations from the ACOM subgroup on the benchmark process, the FRSG Chair is now an active member of the Benchmark Oversight Group.
u) Steer the development and implementation of methods to assess the state of fisheries resources and account for the fisheries impacts in advisory/management perspective.	The FRSG has highlighted various needs, challenges, and priorities and will continue meeting to establish initiatives and activities that address needs via development and implementation of new methods.

### 5.8.3 Expert Groups

The FRSG expert groups are listed in Annex 2.

### 5.8.4 Science highlights

#### Arctic Fisheries Working Group (AFWG)

AFWG provided scientific advice to support the management of cod, haddock, saithe, redfish, Greenland halibut and capelin in subareas 1 and 2. Taking the catch values provided by the Norwegian fisheries ministry for Norwegian catches, and raising the total landed value to the total catches gives an approximate nominal first-hand landed value for the combined AFWG stocks of ca. 20 billion NOK in 2018 (ca. 2 billion EUR).

### **Herring Assessment Working Group for the Area South of 62 deg N (HAWG)**

The herring assessment working group (HAWG) met on an interactive virtual platform in March 2020 to assess the state of five herring stocks and two sprat stocks. HAWG also provided advice for four sandeel stocks in February anticipated by an inter-benchmark for two of them. The working group conducted update assessments for the five herring stocks. An analytical assessment was performed for the combined North Sea and Division 3.a sprat, and a data limited assessment (ICES category 3) was conducted for English Channel sprat (spr.27.7de).

### **Joint NAFO/ICES Pandalus Assessment Working Group (NIPAG)**

The NIPAG met at Havforskningsinstituttet (IMR), Tromsø, Norway from 8 to 13 November 2019 and at ICES HQ in Copenhagen from 20 to 21 February 2020 to review stock assessments referred to it by the Scientific Council of NAFO and by the ICES Advisory Committee. The next NIPAG meeting is at ICES HQ in Copenhagen from 27 October to 02 November 2020.

### **North Western Working Group (NWWG)**

The NWWG met remotely in April 2020 to assess the stock status of two stocks of cod in Greenland waters, Greenland halibut, golden redfish, and Greenland slope beaked redfish. Iceland decided that it would be without ICES advice for the 2020/2021 fishing year for five stocks (cod, haddock, saithe, herring, and Icelandic slope beaked redfish) considered local and are usually assessed during the meeting. The group will meet again in November to review stock assessments of four Faroese stocks and capelin.

### **Assessment Working Group on Baltic Salmon and Trout (WGBAST)**

The WGBAST met by correspondence 31 March – 8 April 2020. The group was mandated to assess the status of salmon in Gulf of Bothnia and Main Basin (subdivisions 22–31), Gulf of Finland (subdivision 32) and sea trout in subdivisions 22–32, and to propose consequent management advices for fisheries in 2021.

### **Baltic Fisheries Assessment Working Group (WGBFAS)**

The WGBFAS met in April to assess the status and produce a draft advice of the following stocks: Sole in Division 3.a, SDs 20–24; Cod in Kattegat, Cod in SDs 22–24, Cod in SDs 24–32; Herring in SDs 25–27, 28.2, 29 and 32; Herring in SD 28.1 (Gulf of Riga); Herring in SDs 30–31 (Gulf of Bothnia); Sprat in SDs 22–32; Plaice in SDs 21–23, Plaice in SDs 24–32; Flounder in SDs 24–25 (no catch advice); Flounder in SDs 26 + 28 (no catch advice); Flounder in SDs 27 + 29–32 (no catch advice); Dab SDs 22–32 and Brill 22–32. Due to the COVID 19 pandemic most of the draft advice were in the abbreviated form. Only for the recently benchmarked stocks: ; Herring in SDs 25–27, 28.2, 29 and 32, Sprat in SDs 22–32 and Herring in SDs 30–31 (Gulf of Bothnia) were full advice sheets drafted.

### **Working Group for the Bay of Biscay and the Iberian Waters Ecoregion (WGBIE)**

Information not provided

### **Working Group for the Celtic Seas Ecoregion (WGCSE)**

The WGCSE met by correspondence in May 2020 and provided updated fisheries data, assessments and draft advice for the main demersal fish and Nephrops stocks across ICES subareas 6 and 7 (with the distribution of megrim, seabass, anglerfish and saithe

extending into other divisions). As in previous years, advice for Nephrops, anglerfish and Rockall megrim were not issued until autumn to make use of the most up to date survey information. This year, advice for the Celtic Sea gadoids (cod.27.7e-k, had.27.7b-k and whg.27.7b-ce-k) had been delayed until autumn to allow evaluation of the French data processing and resubmission of a full data series as part of the Benchmark workshop on Celtic Sea stocks (WKCELTIC).

### **Working Group on the Biology and Assessment of Deep Sea Resources (WGDEEP)**

The WGDEEP met in 2020 to develop draft advice for half of the 29 deep water stocks, including roundnose grenadier, roughhead grenadier, roughsnout grenadier, alfonsinos, black scabbardfish, orange roughy, blue ling, tusk, greater forkbeard and blackspot seabream.

### **Working Group on Science to Support Conservation, Restoration and Management of Diadromous Species (WGDIAD)**

The annual meeting of WGDIAD was held on 10 September 2019 during the ICES Annual Science Conference in Gothenburg, Sweden. The Annual Meeting received reports from ICES Expert Groups and workshops working on diadromous species, and considered their progress and future requirements.

### **Joint EIFAAC/ICES/GFCM Working Group on Eels (WGEEL)**

The WGEEL met in Bergen, Norway, from 27 August to 2 September 2019 to report on developments in the state of the European eel (*Anguilla anguilla*) stocks, their fisheries and other anthropogenic impacts, and to generate draft advice.

### **Working Group on Elasmobranch Fishes (WGEF)**

The WGEF met by video-conference from 16 to 25 June to assess elasmobranch stocks. Advice for skates stocks in the Celtic Seas and Bay of Biscay-Iberia ecoregions as well as for spurdog in the Northeast Atlantic will be released in October.

### **Working Group on Southern Horse Mackerel, Anchovy, and Sardine (WGHANSA)**

Information not provided.

### **Working Group on Mixed Fisheries Advice (WGMIXFISH and WGMIXFISH-Meth)**

ICES Working Group on Mixed Fisheries Advice (WGMIXFISH) met in Copenhagen from the October to 1 November to produce management advice for three areas: North Sea, Celtic Sea and Iberian Waters. These catch options take into account the consequences of technical interactions in multistock, multigear fisheries.

The workshop WKMIXFISH which met in Copenhagen from the 3–5 March 2020 to reviewed the current mixed fisheries advice and identify future direction given the changing needs of the advisory system. This workshop provided an effective platform for researchers, managers and stakeholders to jointly identify the key challenges and drivers for advice on mixed fisheries, review how current methods and approaches meet their needs and to identify future priority areas.

Working Group on Mixed Fisheries Methodology (WGMIXFISH-METHODS) met by correspondence from the 22–26 June 2020 to explore and apply methodologies for the improved production of mixed fisheries options. Work also focused on increasing

quality, transparency and reproducibility of this advice product, and on the implantation of the recommendations from WKMIXFISH.

#### **Working Group on North Atlantic Salmon (WGNAS)**

Information not provided

#### **Working Group on Northwest Atlantic Mackerel Ecology and Assessment**

The first meeting of this Expert Group was postponed to 2021.

#### **Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak (WGNSSK)**

The WGNSSK met by correspondence in spring 2020 and will meet by correspondence in September to assess and develop draft advice for the main demersal stocks in the North Sea, Skagerrak, and Eastern English Channel, including commercial gadoid species (cod, haddock, whiting, saithe, and Norway Pout), flatfish (sole and plaice), and shellfish (Nephrops). WGNSSK also increasingly includes analyses for a number of other bycatch species such as turbot, brill, pollack, dab, flounder, lemon sole, witch flounder, grey gurnard, and striped red mullet.

#### **Working Group on Widely Distributed Stocks (WGWIDE)**

WGWIDE was meeting late August.

#### **Working Group on Transparent Assessment Framework (WGTAFGOV)**

No information provided.

#### **Working Group with the Aim to Develop Assessment Models and Biological Reference Points for Sea Trout (Anadromous *Salmo trutta* populations; WGTRUTTA)**

The Working Group completed its first 3-year term in 2020. ICES has published the Final Report. A sea trout database structure has been created, to provide a central depository for data used by the WG, and consists of two components: for environmental and bio-ecological data. An inventory of data collection methods across the 19 countries of the natural range has been compiled, recognizing that there are common methodological approaches but few, if any, that are uniform across all countries. The WG are liaising with ICES and their Regional Database and Estimation System (RDBES), working towards a time when ICES will host the database. A review of the scientific literature on ecological factors affecting the abundance and life history of anadromous fish, has been published in Fish and Fisheries (Nevoux *et al.* 2019). A set of length-based indicators has been developed to assess the status of a stock (after WKLIFE), using index catchments to demonstrate these indicators and to identify where pressures may have had an impact. Two papers have been published describing the development and application of these length-based indicators of sea trout stock status (Shephard 2018a, Shephard, 2019). The WG has extended the development and application of the Trout Habitat Scores (THS) model using Baltic data from Sweden, and commenced testing this with data from Northern Ireland. The challenges of developing and applying a BRP approach to sea trout were further explored by applying several curve fitting approaches (including Beverton-Holt, Ricker, Hockey Stick) to 'data rich' stocks with data from counts, returning stock estimates, catches, and juvenile abundance surveys. A 'one-size-fits-all' option is highly unlikely, but a suite of tools is more promising, especially if they can be targeted towards a relatively small number of sea trout stock groupings. A resolution for a 2<sup>nd</sup> term has been approved (2020–2023).



## Workshops

There were also at least 22 different workshops in 2020 (January-August), including benchmark stock assessments and other scientific work related to fisheries resources:

(IBPBash, WKBALTIC, WKCLUB, WKCOLIAS, WKD3Lists, WKDEM, WKEEL-MIGRATION, WKENSEMBLE, WKEUVME, WKFlatNSCS, WKGSS, WKMIXFISH, WKMSEMAC, WKNSCodID, WKNSROP, WKREBUILD, WKRFSA, WKSHARK6, WKSTATUS, WKTAf-BI, WKTAf-BN, WKTAf-SNS.

Workshops that will meet September to December:

WKDLSSL2, WKDSG, WKGME3, WKMEDEV, WKRPChange

### 5.8.5 Communication with EG (summary paragraph of activities undertaken)

The EGs remain very active in conducting stock assessments and developing draft advice for ICES/ACOM. Communication within the entire Steering Group occurs a few times per year, with standing meetings at WGCHAIRS and the ICES ASC. Additional remote meetings occur as needed. There is regular communication between the FRSG Chair and EG Chairs to review TOR and other activities/initiatives within each EG. The EGs themselves follow fairly prescribed operating procedures as they provide directly to the ICES annual advisory process. Overall, concerns and recommendations are communicated to ACOM, SCICOM, and the ICES community.

### 5.8.6 Summary of new EG proposals and EG closing

The FRSG now includes WGHARP, WGTRUTTA, and WGTAFGOV.

### 5.8.7 Forward look (including actions for SG and SCICOM/ ACOM)

Given its scope of work, the FRSG is well-positioned to coordinate on strategic and research directions that are advice-relevant. The group is aiming to hold a strategic visioning meeting in 2021 that will identify new directions, initiatives, and methods and will develop and implementation strategy to address those identified to be highest priority. The FRSG is currently coordinating with the Integrated Ecosystem Assessments Steering Group in planning a workshop on evaluating and optimizing the use of ecosystem overviews in the advisory process. The SG is also sponsoring and coordinating a proposed session for the 2021 Annual Science Conference on structural uncertainty in fishery stock assessments. In addition to these efforts, the SG is actively compiling and prioritizing its science needs to facilitate more organized communication and action-based responses to priority needs. The SG is taking on a more active role in ICES benchmark process.

## 6 Operational Groups

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### 6.1 Data and Information Group (DIG)

This section outlines key activities in the Data and Information Group (DIG) and ICES Data Centre between the March 2020 and September 2020 Science Committee (SCICOM) meetings with emphasis on the DIG meeting 25–29 May 2020.

DIG is working towards a proposal for separating data policy and licensing for data across ICES.

DIG was also requested to examine requirements for hosting data visualisation systems and community contributed datasets separate from the main systems. After reviewing the type of proposals commonly encountered, DIG is building decision support and improved guidance for the ICES expert groups.

Work in the ICES Data centre are increasingly aligning FAIR principles for making data Findable, Accessible, Interoperable, and Reusable. In particular, a service-oriented design towards the new portal exemplifies this. In addition, the work on accreditation and data flow diagrams is documenting this approach.

Both newly established and ongoing governance groups are delivering on a wide range of activities to improve the way the ICES community interact with systems and data.

Work on finding reviewers for existing Data Type Guidelines has been revitalised, and is progressing toward a point where more data guidance can be referenced in a dedicated data policy.

DIG has revised the challenges and opportunities tracker of data and information management related topics. Several have been upgraded in their potential to disrupt.

Finally, DIG has unanimously agreed on a new chair to take over from January 2021.

#### 6.1.1 Data Centre accreditation

The Data Centre submitted the final accreditation application in June 2020, after a review by the DIG chair (Jens Rasmussen, UK) and informing the Data and Information Group at their annual meeting in May. The Core Trust Seal (CTS) organization invoiced the administrative fee to ICES in July 2020, which then triggers the formal timeline for CTS to select reviewers. CTS have up to 2 months to provide feedback and comments to the application, and ICES can make up to 5 iterations of the application based on this feedback. We would therefore anticipate feedback from CTS reviewers by late September 2020.

The application responds to the 16 requirements of the CoreTrustSeal accreditation certification, each requirement is scored on a scale of 0-4 (from not applicable to fully implemented). In the application, ICES have self-assessed as follows:

- 13 requirements are fully implemented in the (ICES) repository
- 3 requirements are in the implementation phase

Of the three requirements in the implementation phase, these relate to the planned changes to the data policy/data licencing and the description of the data flows through schematics (see <https://doi.org/10.17895/ices.advice.6101>). We have continued the refinement of the ICES managed data flows schematics, which will form a part of the accreditation. This complements the wider effort on addressing quality control of data, and quality assurance of advice – where process flows of the overall advice are seen as

key to understanding where control checks are needed, and where they will have the greatest impact.

### **6.1.2 Data Policy and Licensing**

Currently all aspects of process and handling of data (policy) are combined with the rights and permissions of data use (license) in the ICES data policy document. This means each variation of data access or use permissions results in a new data policy. DIG is working up a proposal to create a global data policy that outlines all aspects of how data are received, maintained, and safeguarded at ICES, while the data made available via ICES data portals can have different licenses associated with each collection to reflect permissions, limitations, and responsibilities to users of the data.

Large amounts of data managed through ICES are openly available, and through both breakout group work and plenary discussion, DIG identified that the license conditions for using this type of data from ICES is largely aligned with the Creative Commons Attribution License. There are however some differences that will need further consideration and decisions for the ICES Science and Advisory Committees and Council over the coming period.

DIG is also developing a set of model licenses for more restrictive data access, with an aim to present a package of a revised data policy and license proposals in March once the feedback from the data centre accreditation is known.

### **6.1.3 Community Contributed Data and Data Visualisation**

At the March 2020 SCICOM meeting DIG was tasked with developing guidance for deploying and managing data visualisation systems. There has also been a request from the ACOM Chair to consider mechanisms in a wider context that could include datasets that cannot currently be hosted on an existing ICES system.

ICES Data Centre receives between 10 and 20 new requests each year to host some kind of data, information, or data visualisation that does not fit into existing systems.

DIG and ICES Data Centre developed the first version of the Best Practice for Data Management in 2019, and the document already outlines a number of best practise principles that should ideally have been addressed by the time data are to be hosted at ICES. Unfortunately, for the majority of requests, these considerations are generally not documented.

The requests for hosting stand-alone datasets and visualisations does not currently fall under any contractual obligation or governed system, and so it falls to the ICES Data Centre to evaluate and prioritise these against resources available, and balancing risks to ICES' reputation.

While it is positive that the ICES community increasingly wants to openly share content, it is still important that requests are considered thoroughly to avoid quality issues, duplication, or potential impact on the credibility of the organisation.

DIG recognises the need for a clear and effective decision and prioritisation model to help support and govern a rising number of requests in this area. A decision template is being developed in conjunction with improved guidance.

### **6.1.4 Governance Activities**

During the 2020 meeting of DIG, governance groups provided an update on their activities. Although not directly associated with DIG in organisational structure, the dialogue was very useful. All groups are working well at different stages of

establishment, and even the newly started governance groups in 2020 are getting up to speed of defining scope and processes for prioritising issues and decisions.

Commonly across the governance groups and DIG, it was felt that enhanced communication is useful, so a WebEx session is being planned for the autumn to ensure communication is maintained and updates can be shared.

The format and meeting schedule of governance groups means that the existing scientific report formats is often a poor fit for the groups to report back. It is hoped that SCICOM will recognise this, and that the business report format can be a workable substitute for governance groups. DIG is seeking feedback on this suggestion, and will also engage with the secretariat, and relevant steering group chairs to ensure reporting is meaningful and comprehensive, yet aligned with the different meeting structure of governance groups.

#### **6.1.5 Data Guidelines Review**

The ICES Data Type Guidelines have been around for a long time (most were created around 1999 and revised in 2006), and last year DIG decided to contact other groups to seek assistance in review and ongoing maintenance for a number of these guidelines. Unfortunately, due to losing a critical member in this process, the progress has been limited. During the DIG meeting, a renewed approach for consultation and review was developed whereby DIG will remain more actively involved, and still seek outside review assistance, primarily from the ICES community, but also outside where necessary

#### **6.1.6 Revised Challenges and Opportunities**

As part of the routine annual review of challenges and opportunities relating to Data and Information management in ICES, several items were revised. In this update, several new and revised topics represent medium to high potential to disrupt:

##### **High potential**

- Quality of open code (Developing culture of code reviews to reduce risk)
- Quality Management Framework (Significant improvement in processes, but potentially large resource requirement)
- Adoption of new technology (opportunities in new technologies bringing more effective collaboration (e.g. remote meetings), but also risk of alienating some users)
- Data Availability (Lack of data submissions (e.g. COVID-19 restrictions))

##### **Medium potential**

- Data storage and volumes (cloud adoption, expectations, lower granularity analysis)
- Semantic interoperability (Low uptake, but potential to support quality processes and data integration)
- Accreditation of Data Centre (Recognition and reputation, large resource investment)
- Data Licensing (misalignment between member countries, ICES can provide more clarity with revised licensing structure)
- Hosting Community data and applications (Reputational risks and loss of control, but potential for closer engagement with EG's once clear rules and guidance provided)

### 6.1.7 New chair for DIG

The current chair of DIG (Jens Rasmussen, UK) has served 3 years + 1 year extension, and a new chair was unanimously agreed by DIG members at the May 2020 meeting.

Sjur Ringheim Lid from Norway, will take over as chair from 1 January 2021. Sjur is a long standing and experienced member of DIG. As a Senior Software engineer at the Norwegian Marine Data Centre, he will bring extensive expertise to the role.

As a reflection on his tenure as chair of DIG, Jens has highlighted 4 areas that he regards as key achievements and continued work for DIG:

- Being a "critical friend" to the ICES Data Centre, engaging with and providing feedback to the ICES Data Centre projects.
- Enhancing governance of data and information systems, and getting wider community engagement in the prioritisation of developments and issues for data.
- Deeper integration potential for ICES data than ever before with deployment of web services, more interoperable vocabularies, metadata, and persistent identifiers for data.
- Engagement between key bodies in ICES has increased, which has been critical for the adoption of the FAIR principles, guiding us towards the strategic improvements in science and advice plans

## 6.2 Training Group (TG)

**Training Group:** Jan Jaap Poos (Chair), Steven Cadrin, Martin Pastoors, Jörn Schmidt, Rafael González-Quirós, Daniel Duplisea, Pieter Jan Schon

The ICES Training Programme was initiated in 2009 to help build capacity in ICES and to support the scientists involved in the advisory process. ICES offers training courses by high-profile scientists and instructors to ensure that those involved in advisory process, have the skills necessary to complete such work. The objective of ICES involvement in training is quality assurance in the advisory process.

Over 30 courses have been offered on a range of topics, including stock assessment (introductory and advanced), ecosystem modelling, model building, management strategy evaluation, Bayesian inference, fisheries advice, trawl survey design and evaluation, integrated ecosystem assessment, analysis and visualization of Vessel Monitoring Systems, communication of science and advice, and how to lead an effective technical meeting. Each course was taught within the context of the ICES science and advisory system to demonstrate best practices as well as state-of-the-art technical skills. More than 700 students have attended ICES courses from over 30 countries. Most students have been from ICES member countries, representing all member countries but one. Many students and several instructors are from other countries and cooperating organizations.

### 6.2.1 ICES training courses end of 2019

In 2019, the ICES Training offered seven training courses on a range of topics, held at ICES HQ and abroad. Reports from each course are available online.

(<http://ices.dk/news-and-events/Training/Pages/Previous-reports.aspx>)

- Introduction to Stock Assessment  
21-25 October 2019, ICES HQ, Copenhagen, Denmark.

- [Introduction to CPUE standardization and development of annual indices of stock abundance](#)  
4-8 November 2019, ICES HQ, Copenhagen, Denmark.
- [Principles and methods of broadband technologies: application to fisheries acoustics](#)  
10-17 December 2019, Onboard G.O. Sars, Bergen, Norway

### 6.2.2 ICES training courses 2020

In 2020, ICES training had planned on offering several courses. However, due to the COVID-19 pandemic only “*Data-limited stock assessment methods and reference point estimation*” was able to run as scheduled.

Other courses have either been postponed until 2021 or moved online. The ICES secretariat is currently working with the Training Group on creating official guidelines regarding moving training courses online.

Below is a summary of the 2020 courses:

- [Data-limited stock assessment methods and reference point estimation](#)  
6-10 January 2020, Nanaimo, British Columbia, Canada
  - 29 participants
- [Fish stock assessment: SAM and TMB](#)  
12 - 16 October 2020, **online course**
  - 30 registered participants (MAX capacity met)
- [Bayesian Network Analysis and the Social-Cultural Dimension](#)  
7-11 December 2020, **online course**
  - 4 registered participants

Courses in the pipeline for 2021:

- [Spatial models in marine science using INLA and inlabru](#)
  - Postponed in 2020, dates and location TBC 2021 (Originally May 2020)
- [Social science methods for natural scientists](#)
  - Postponed in 2020, dates and location TBC 2021 (Originally Sept 2020)
- Opening the Box
  - 8-12 February 2021, ICES Headquarters, Copenhagen, Denmark or online
- Introduction to Management Strategy Evaluation
  - Dates and location TBC 2021
- Scientific publishing and editing
  - Dates and location TBC 2021
- Close Kin Mark Recapture
  - TBC 2021, San Sebastian. With AZTI support
- VMS tools, mapping and changing fish patterns
  - Dates and location TBC 2021

- Large-scale tag-recapture campaigns and their potential role in the management of fisheries resources
  - Dates and location TBC 2021
- Egg surveys (under development)
  - Dates and location TBC 2021/2022

### **6.2.3 Promotion of training courses**

During the COVID-19 pandemic promotion of training courses has been put on hold due to the uncertainty of their timing. When courses have confirmed dates, e-mails are sent to specific WGs and EGs in the ICES community, who might benefit from the courses. The Training Group expects that instructors and participants will be more experienced with remote learning after COVID-19, and remote instruction may be more feasible in the ICES Training Programme. In addition, one course is featured in each of the ICES newsletters. Course offerings are always available on the ICES website training pages. National representatives to SCICOM and ACOM are encouraged to disseminate information about ICES training courses in their own organisations.

### **6.2.4 ICES training and ICES projects**

Through participation in H2020 projects, ICES training is contributing to training opportunities, in cooperation with other project contributing partners.

PANDORA project: Paradigm for Novel Dynamic Oceanic Resource Assessments. ICES is lead partner in implementation of courses across all the projects work packages. Topics are to be defined by stakeholders at regional workshops. Broadly, courses will include survey sampling techniques, data required for assessments, training on state-of-the-art tools and stock assessment challenges.

All projects are offered the option to submit [training course proposals online](#), which are out through the training course selection process by the committee. If the project is able to provide funding for a specific training, ICES training can support the training activity, with handling applications, administration, SharePoint etc. with the condition that registration will be open for all. This is to ensure that training activities, be it through projects or standard ICES training, adhere to the aim of cost neutrality.

### **6.2.5 Building Capacity to Meet Future ICES Advisory Needs Through Education**

Council defined education as the long-term process (graduate or post graduate education) that prepares future experts through Masters' and Ph.D. coursework and research and training as the short-term process of developing skills within the existing pool of experts through short courses, such as those provided by ICES under the guidance of the Training Group.

Council and Bureau want to develop a strategy that will build capacity (through graduate- and post-graduate education) for meeting future ICES science-based advisory needs. This strategy will involve coordination among North American and European Universities to develop multidisciplinary, multi-institutional coursework, research opportunities and scientific personnel exchanges.

The previously scheduled workshop (WKEDU) that was to be held at the ICES Secretariat in Copenhagen during the week of June 15, 2020 had to be postponed due to the COVID-19 pandemic.

The training group is represented in the initiative by membership of several Training Group Members, and Steve Cadrin being chair of WKEDU.

#### **6.2.6 Develop and run an engaging training programme.**

Within the ICES Joint work Plan 2019-2024 the training group is tasked to evaluate, develop, and implement a strategy for the ICES Training Programme, including assessment of training needs, online training courses, considerations of alternative training initiatives (courses arranged by Ph.D/Post.doc), and exploring options for accreditation of the training course.

As a first step, we plan to evaluate the impact of the courses that were held over the last 5 years, and solicit views on the future direction of the training courses. This direction will include the content of the courses but also the form of the courses. That is to say, how strong is the preference of participants to either offline or online courses. The latter is especially relevant in the light of the current COVID-19 pandemic, but also the initiatives to reduce the carbon footprint of the work within the ICES community.

Once the views of the current program and the direction of the program within ICES is polled, the results can be used to develop and implement a strategy in 2021.

#### **6.2.7 Overview of expenses to ICES training programme.**

In 2019 the ICES training programme had expenses totalling **629,000 DKK**. This includes instructor honorarium, travel, per diem and catering for course participants.

Income from course fees from 2019 totals **857,000 DKK**.

Overall is a surplus of **228,000 DKK**.

### **6.3 Science Impact and Publication Group (SIPG)**

The Science Impact and Publication Group (SIPG) was established in 2017 and coordinates and supports the publication and dissemination of research conducted under the auspices of ICES. The group is responsible for guiding, monitoring and sharing ICES publication output and increasing the reach and impact of ICES publications. SIPG is chaired by Nils Olav Handegard, and has eight external members and five members from the ICES Secretariat (ICES Editor, Editorial Assistant, Technical editor, Head of ICES Data, and Web analyst).

#### **6.3.1 ICES Library functionality assessment (ToR 1a, b, and d)**

At the mid-term 2020 SCICOM meeting, SCICOM approved that SIPG should look into different options to improve the ICES library, with focus on 3 options: (1) improve the existing library; (2) create a new on premises ICES library; or (3) use a hosted library. Since the mid-term SCICOM meeting, all three options have been looked into with extensive help and advice from librarians and database managers from a number of institutions in ICES countries (e.g. NOAA, IFREMER, IMR, Marine Scotland, IPMA), and through contact with relevant companies specialised in repositories.

Summary of relevant findings:

(1) We have been recommended not to custom build a new repository, or invest significant time on improving our existing repository, since it would require a substantial investment of time and resources to work on aspects which have already been solved in the open source and hosted solutions.



(2) SIPG considers using a commercially hosted repository would be the most cost-effective way of achieving our aims, providing a professionally run library, with continuous technical back-up for continuity of service, trouble-shooting or improvements. This is also in line with the recommendation from the assessment.

(3) Five commercial repositories are being evaluated as potential candidates due to the functionalities offered and the quality of their repositories.

SIPG has established a subgroup that will conduct a detailed evaluation of the five repository options for SIPG. Based on this SIPG will make a recommendation.

### **6.3.2 Publications licencing and ICES disclaimers (ToR 1b, 2 and 4)**

#### **6.3.2.1 Publications licencing**

ICES owns the copyright of all ICES own publications. To enable the use of copyrighted material by third-parties the standard approach is to use [copyright licences](#), with one of the most broadly adopted schemes being [creative commons](#). ICES currently has not adopted any particular copyright licencing scheme for its publications, but rather relies on a text drafted into the reports. This text requires that ICES work be cited when used, and excludes commercial use of ICES publications.

SIPG has evaluated the current licencing policies, and potential associated issues and has made the following recommendations:

- (i) ICES should adopt creative commons 4.0 licencing (CC)
- (ii) ICES should continue to require citations when an ICES Publication is used (include the CC-BY derivative).
- (iii) ICES should allow commercial use of publications (avoid the CC-NC derivative)

In conclusion SIPG recommends that ICES publications adopt CC-BY 4.0 for their publications. SCICOM has approved this recommendation.

#### **6.3.2.2 Publications disclaimers**

SIPG has reviewed the disclaimers and recommends that ICES use the following wording for the two standard disclaimers:

- (1) “This document has been produced under the auspices of an ICES Expert Group or Committee. The contents therein do not necessarily represent the view of the Council”, which is slightly different from the existing, i.e. ‘under the auspices of’ rather than the ‘direct product of a group’. The change has been made to better accommodate CRR, TIMES and ID Leaflets since these often have invited authors
- (2) “This document is approved by the ICES Advisory Committee and produced under the auspices of the International Council for the Exploration of the Sea”, which is similar to the original text.

SIPG discussed whether the first disclaimer is appropriate when ICES is claiming both authorship and copyright of the report, but is at the same time waving responsibility for the content. It was clarified that the disclaimer is in place to give the expert groups the freedom to express their opinions. This falls outside the remit of SIPG, and SIPG would like SCICOM and ACOM’s opinion about the use of disclaimer 1. SIPG will recommend both disclaimers until any changes are requested by ACOM and SCICOM.

SCICOM has evaluated text 1 and deemed it fit for purpose.

### 6.3.2.3 ICES Business Reports Series (ToR 1a, 1b and 2)

The ICES Business Report Series hosts reports from Expert Groups and ICES committees that produce reports with an ICES procedural, rather than a scientific, focus, and which do not fit under the umbrella of ICES Scientific Reports. Due to the wide variety of reports encompassed, SIPG was tasked to evaluate if a DOI and ISSN number should be used, and how the cover set should be organized for the different reports. SIPG made the following recommendations:

- (i) ICES Business reports should be issued a DOI
- (ii) ICES Business reports should be issued an ISSN
- (iii) Due to differences in author acknowledgment and type of disclaimer used, a given set of different inner covers will be available for the template, along with specific instructions on when each should be used.

SCICOM has approved the proposed changes

### 6.3.3 Review of ICES Peer-reviewed Publications

#### 6.3.3.1 General updates

- (i) The project to expand the scope of TIMES has been very successful. Several groups new to the series have submitted publication proposals, and the longer-term goal of raising the publication numbers to 3-5 issues per year should already be achieved in 2020.
- (ii) The Series of ICES Survey Protocols has successfully joined the Techniques in Marine Environmental Sciences Series (TIMES), with the first volume due to be published before the end of the year. Specific guidelines have been developed for ICES Survey protocol authors and can be viewed [here](#)
- (iii) The [ICES publications](#) website is undergoing updating and restructuring.
- (iv) The CRR/TIMES Guidelines for authors have been updated to include more comprehensive instructions on how and when to submit a publication resolution, and can be viewed [here](#).

### 6.3.4 Publication overview

#### 6.3.4.1 CRR

CRR published since 2019 SCICOM Meeting: 1; CRR reports in publication process (in preparation or under review): 7; cancelled CRR since the 2020 mid-term SCICOM meeting: 2. Published CRR since the 2019 SCICOM meeting:

*No.349* ICES Report on Ocean Climate 2018. Prepared by the Working Group on Oceanic Hydrography. 119 pp. Multiyear resolution – C. Res. 2013/1/SSGEF05

Cancelled CRR since the 2019 SCICOM meeting: (i) **2018/1/EOSG01** – Effect of tow duration on catch rates and species richness in the North Sea and Northeast Atlantic IBTS. Authors did not anticipate being able to complete report by the deadline. They will resubmit the resolution when the report is closer to completion; (ii) **2016/1/SSGEPD04** - A Status Report on Harmful Algal Events in the ICES area. Cancelled for exceeding the 2-year time limit. The authors plan to update and resubmit the resolution in 2020/2021.

#### 6.3.4.2 Techniques in Marine Environmental Sciences (TIMES)

TIMES published since 2019 SCICOM Meeting: 2; TIMES reports in publication process (in preparation or under review): 4. Published TIMES since the 2019 SCICOM meeting:

- No. 63 Protocol for the verification of ballast water compliance monitoring devices. M.N. Tamburri, S.A. Bailey, R.A. Everett, M.R. First, S. Gollasch, O. Outinen, and L.A. Drake. June 2020. 13 pp. C. Res. 2019/1/HAPISG03
- No. 62 Guidelines for the use of Diffusive Gradients in Thin Films for measuring metal fluxes in sediment. E. D. Amato, T. Bolam, and M. J. Belzunce-Segarra. December 2019. 19 pp. C. Res. 2017/1/EPISG06

#### 6.3.4.3 ID Leaflets for Plankton

Leaflets published since 2019 SCICOM Meeting: 4; Leaflets undergoing final revisions before publication: 1; Leaflets in process (in preparation or under review): 9. Published Plankton ID leaflets since the 2019 SCICOM meeting:

- No.192 Tubulariidae, Fleming, 1828. P. Licandro. May 2020. 11 pp.
- No.191 Pinnotheridae de Haan, 1833. J. I. González-Gordillo, and J.A. Cuesta. April 2020. 20pp
- No.190 Varunidae H. Milne-Edwards, 1853, and Ocypodidae Rafinesque, 1815. J.A. Cuesta and J.I. González-Gordillo. April 2020. 22pp.
- No. 189 *Clausocalanus* Giesbrecht, 1888. M.G. Mazzocchi. April 2020. 22pp.

#### 6.3.4.4 ID Leaflets for Diseases in Fish and Shellfish

Leaflets published since 2019 SCICOM Meeting: 0. Leaflets in process (in preparation or under review): 12

## 7 Strategic Initiatives

### 7.1 Strategic Initiative on Climate Change Impacts on Marine Ecosystems (SICCME)

The SICCME leadership has undergone substantial changes in the last year with both ICES chairs (Myron Peck, Germany and John Pinnegar, UK) and the PICES chairs (Jackie King, Canada and Shin-ichi Ito, Japan) ending their terms. Incoming chairs on the ICES side are Christian Möllmann (Germany) and Mark Payne (Denmark) and on the PICES side are Kirsten Holsman (USA) and Xiujuan Shan (China). In addition, the onset of the global COVID-19 pandemic has also provided numerous challenges for all of the individual members that have taken most of their focus during the previous six months. The combination of these two factors has caused the loss of any momentum that the initiative had previously.

The next steps for SICCME will be to focus on re-establishing itself after these changes. A key initiative that is being explored in this regard is to link the ICES and PICES communities more actively via an online forum. The possibility of joint leadership meetings is also being explored, although initial attempts at scheduling such a meeting across three time zones (Europe, US West Coast, China) in the midst of the pandemic has provided challenging. Nevertheless, it was possible for ICES SICCME to participate in the PICES S-CCME annual meeting this October, and this proved to be a very valuable

way to re-establish cooperation between the two groups. All chairs are looking forward to a productive future working together.

#### **7.1.1 Events, since the March 2020 SCICOM report:**

**20–23 April 2020.** The **Working Group on Integrative Physical-biological and Ecosystem Modelling (WGIPEM)** was scheduled to meet at the Royal Belgian Institute of Natural Sciences, Brussels, Belgium. However, this meeting was cancelled due to the COVID-19 pandemic, and has been rescheduled to 2021.

**7–10 September 2020.** The **Joint ICES/PICES Working Group on Impacts of Warming on Growth Rates and Fisheries Yields (WGGRIFY)** met online. The group brings together worldwide scientific expertise to assess the impact of warming on fish growth, and the implications for fisheries yield, on a global scale. ICES WGGRIFY was approved by PICES in May 2020 and is now officially an ICES/PICES WG. The WGGRIFY co-chairs welcomed Dr. Shin-ichi (University of Tokyo) as a PICES-affiliated co-chair. Membership in WGGRIFY now includes members from China, Korea, Japan, and Russia in addition to EU countries, Canada and the US. The aim of the meeting was to introduce WGGRIFY members to each, build a common understanding of the WGGRIFY TORs, and develop implementation plans for each of the TORs that will guide activities over the next 6 months.

#### **7.1.2 Upcoming events:**

September 2020: ICES Annual Science Conference (ASC), Copenhagen, Denmark. Postponed to 2021 (see below).

September 2020: Kick-off meeting of EU H2020 Future-MARES, a large (32 partner, 15 nations) 4-year programme advancing knowledge on climate change impacts to marine and transitional waters and the effectiveness of nature-based solutions to safeguard / enhance ecosystem services. FutureMARES has three over-arching case studies: Habitat Restoration (e.g. seagrasses, shellfish), Habitat Conservation (e.g. MPAs, charismatic megafauna), and Sustainable Harvesting (e.g. ecosystem-based fisheries, IMTA). Projections of climate impacts including effectiveness of scenarios of NBS will be made for 7 regional European marine ecosystems contributing to SICCME activities. FutureMARES is coordinated by Myron Peck. John Pinnegar and several other members of SICCME are involved in the programme.

September 2020. ICES/ PICES Working Group on Small Pelagic Fish (WGSPF) will meet online. The group aims to advance understanding how drivers (environmental and/or anthropogenic) impact the population dynamics of SPF, perform comparative analyses, and coordinate research. The group is also planning a symposium for 2022 (see below).

1 November 2020. Literature submission cut-off date for IPCC WGII (postponed from 1 July). Literature to be included in the upcoming 6th Assessment report must be submitted by this date.

4 December 2020 – 29 January 2021. Expert and Government review of IPCC WGII Second Order Draft (postponed from 7 August - 2 October 2020)

Spring 2021: ICES Working Group on Seasonal-to-Decadal Prediction of Marine Ecosystems (WGS2D) to be held online. The group is chaired by Mark Payne (DK) and considers ocean predictions on timescales from seasons to decades in order to support

marine resource management. The group contains 26 members from 10 countries. Activities in this ICES group parallel those in the PICES Working on Climate and Ecosystem Predictability (WG-CEP) and the two groups are in regular contact.

Spring 2021. Working Group on Integrative Physical-biological and Ecosystem Modelling (WGIPEM) Next meeting.

February 2021: IPCC WG II - AR6 fourth and final Lead Author Meeting (Guatemala) to be attended by Christian Möllmann (lead author – ‘Europe’), John Pinnegar (lead author – ‘Small Islands’); Kirstin Holsman (lead author – ‘North America’); Shin-ichi Ito and Mette Skern-Mauritzen (lead author – ‘Ocean and coastal ecosystems and their services’).

May 31 – June 2 2021. First International Ocean Decade Conference, Berlin, marking the start of the UN Decade for Ocean Science for Sustainable Development.

September 2021: ICES Annual Science Conference (ASC), Copenhagen, Denmark. Several theme sessions have been accepted for consideration that are of relevance to SIC-CME (and which cite the Strategic Initiative). These include: [K] Taking stock on ocean acidification research for provision of future efforts (Silvana Birchenough et al.); [O] Impacts of human pressures on ecosystem components assessed by dynamic modelling (Solfrid Sætre Hjøllø *et al*); [D] Past, present and future of marine plankton assemblages and communities (Dafne Eerkes-Medrano et al.); [E] Connecting economic, social science, and interdisciplinary research and management advice (Alan Haynie); In addition, the following Networking Sessions will be held i) ICES in a Net-Zero Emission World (A Local / Remote Network Session) (Bill Karp & Bill Turrell); ii) Marine Ecological Forecasts – what do we need? (Mark Payne and Sevrine Sailley).

26–28 October 2021, ICES 4th Decadal Variability of the North Atlantic and its Marine Ecosystems: 2010–2019. Bergen, Norway. This symposium is part of a series of decadal symposiums organized by ICES, where researchers gather to review the variability of North Atlantic environmental conditions and marine ecosystems over the past decade. Researchers aim to understand the relationship between ecosystem components and how they influence the distribution, abundance and productivity of living marine resources. In addition, researchers will review recent advances in sub-decadal forecasts of ecosystem change.

20-24 February, 2022 International Symposium on Small Pelagic Fish: New Frontiers in Science for Sustainable Management Lisbon, Portugal. The symposium will highlight the state-of-the-art in the following and other topics surrounding the sustainable exploitation of SPF within an ecosystem context. Climate change impacts are expected to be a recurring theme of this symposium.

## **7.2 Strategic Initiative on the Human Dimension (SIHD)**

### **7.2.1 SIHD Chair News**

Alan Haynie (USA) is currently the sole SIHD Chair and will work with ICES leadership and SIHD members to identify new co-chairs in coming months.

### **7.2.2 Recent and SIHD Activities**

Since March 2020, the SIHD has engaged in a variety of ongoing activities, all of which have been online due to COVID-19. This has been unfortunate in terms of workshop social connections, but the workshops of SIHD-related expert groups have been very well attended and robust progress continues.

**The Working Group on Balancing Economic, Social, and Ecological Objectives in Integrated Assessments (WGBESEO, [ToR](#))**, chaired by David Goldsbrough (The Netherlands), David Langlet (Sweden), and Paulina Ramirez-Monsalve (Denmark) was formed in January. WGBESEO held its first online meeting 15-16 April 2020 and had a follow-up meeting 8 June 2020. A number of online meetings will be held in the coming months to continue the exciting work of the group.

In its ongoing [ToRs](#), [WGMARS](#) members i) research on behavioural economics/nudging in fisheries, ii) research on integrated ecosystem assessments in the context of ICES Regional Groups, and iii) carry out a social network analysis of ICES expert groups. Findings of this work will be published each in an academic paper, and are complemented by WGMARS outreach activities. During this year's WGMARS annual meeting in April 2020, there was a robust exchange with selected NOAA experts on NOAA IEA/EBM work and programs. Leyre Goti (Germany) has joined Patricia Clay (USA) as a co-chair.

The WGECON and WGSOCIAL expert groups held joint online meetings 15-19 June, 2020. This format provided lots of great interdisciplinary discussions and collaboration and research planning.

[WGECON](#), chaired by Rasmus Nielsen, Denmark, Olivier Thebaud, France, and Arina Motova, UK, was developed to address economic issues, focusing on the development of economic metrics and the development of core economic analyses for fisheries advice and contributing economic indicators for ICES ecosystem overviews. The Final report of the first 3 years is being completed now.

[WGSOCIAL](#), chaired by Lisa Colburn (USA), Amber Himes-Cornell (FAO), and Marloes Kraan (The Netherlands) has continued its work on developing social indicators in several ICES ecoregions. WGSOCIAL is working to complete its Final Report for its first 3 years and has given lots of attention to COVID-19 research and policy analysis, as described in greater detail below.

### **7.2.3 Recent and Upcoming COVID-19 Research and Communications Activities**

WGSOCIAL, led especially by co-chair Marloes Kraan, in collaboration with many ICES social scientists, has contributed to a variety of activities in recent months to promote collaboration and communication of COVID-19-related research and management actions. This 7 April [ICES web story](#) describes some of their recent exciting work. Many SIHD members are active in their countries in response to the myriad management challenges of COVID-19. The crisis reveals both the incredible value of economic and social data and expertise and the need for more support for this type of work to help communities and diverse stakeholders adapt to dramatic changes.

On Wednesday 16 September, 16:00–17:30 CEST, SIHD members will hold an [ICES Webinar](#), featuring SIHD members' work and research on COVID-19. Talks will be given by Alan Haynie (USA), Doug Lipton (USA), Cristina Pita (Portugal), and Marloes Kraan (The Netherlands).

### **7.2.4 Upcoming SIHD Planned Activities**

**Update the SIHD Roadmap.** SIHD has been working to update the SIHD Roadmap in order to promote an ongoing discussion about how ICES can become a more active and influential contributor to social and economic science. In 2018, SIHD- chairs produced a document “the SIHD Roadmap” and opened a SIHD forum on the ICES website. The roadmap contains information on planned activities for both the next two

years and ideas about SIHD activities over the coming decade. We had planned an update of the SIHD Roadmap for this year's ASC, but will hold several virtual meetings and utilize the SIHD Forum in coming months to complete the update of the Roadmap this year.

SIHD and other ICES human dimensions members are working to plan the **ICES/PICES MSEAS Symposium** which was scheduled to be held this spring in Yokohama, Japan and has been rescheduled for May 2021.

The [Report](#) of the Workshop on Challenges, Opportunities, Needs and Successes for including human dimensions in IEAs ([WKCONSERVE](#)), which was held in October 2019 in Copenhagen, lays out a variety of ways in which human dimensions can be better incorporated in diverse ICES work. We will work with expert groups, IEA members, ICES staff and others to continue to better integrate human dimensions research into ICES.

## Annex 1: List of ICES Expert Groups that were dissolved, established, changed committee or were renamed

### *Change of Chairs (ACOM, SCICOM, Steering Groups (SG)/Operational Groups (OG)/Strategic Initiatives (SI)*

AFFILIATION	GROUP NAME	CHAIR – OUTGOING	CHAIR – INCOMING
SCICOM	ICES Science Committee	Simon Jennings, UK	Jörn Schmidt, Germany
SCICOM SI	Strategic Initiative on the Human Dimension (SIHD)	Johanna Ferretti, Germany	TBA
OG	Data and Information Group (DIG)	Jens Rasmussen, UK	Sjur Ringheim Lid, Norway
SG	Ecosystem Processes and Dynamics	Silvana Birchenough, UK	Steven Degraer, Belgium
SG	Integrated Ecosystem Assessments SG (IE-ASG)	Mette Skern-Mauritzen, Norway	Debbi Pedreschi, Ireland
SG	Ecosystem Observation Steering Group (EOSG)	Sven Kupschus, UK	Joël Vigneau, France
SG	Data Science and Technology Steering Group (DSTSG) – established from 1 January 2021	–	Jens Rasmussen, UK

### *Established Expert Groups*

AFFILIATION (SG)	GROUP NAME	CHAIR – OUTGOING	CHAIR – INCOMING
EPDSG	ICES/PICES Working Group on Ocean Negative Carbon Emissions (WGONCE)		Louis Legendre, France (ICES) – Carol Robinson, UK (ICES) – Nianzhi Jiao, China (PICES)
EOSG*	Working Group on Size and Species Selection Experiments (WGSSE)		Haraldur Arnar Einarsson, Iceland/FAO, – Michael Pol, USA

### *Expert Groups that will change Steering Group (as from 1 January 2021)*

AFFILIATION (SG)	EXPERT GROUPS	OLD AFFILIATION (SG)	NEW AFFILIATION (SG)
	Working Group on DATRAS Governance (WGDG) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
	Working Group on Technology Integration for Fishery-Dependent Data (WGTIFD) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
	Working Group on Fisheries Acoustics, Science and Technology (WGFAST) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
	Working Group on Spatial Fisheries Data Governance (WGSFDGOV) <sup>Error! Bookmark not defined.</sup>	HAPISG	DSTSG
	Steering Committee of Regional Fisheries Data Base (SCRDB) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG



Working Group on Atlantic Fish Larvae and Eggs Surveys (WGALES) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
Working Group on Recreational Fisheries Surveys (WGRFS) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
Working Group on Acoustic Data Governance (WGAcousticGov) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
Working group on machine learning in marine science (WGMLEARN) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
Working Group on SmartDots Governance (WGSMART) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
Working Group on Biological Parameters (WGBIOP) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
Working Group on Commercial Catches (WGCATCH) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG
Workshop on Acoustic Backscatter Models (WKABM) <sup>Error! Bookmark not defined.</sup>	EOSG	DSTSG

### *Renamed Expert Groups*

AFFILIATION (SG)	EXPERT GROUPS	CHAIR – OUTGOING	CHAIR – INCOMING
ASG	Working Group on Environmental Interactions of Aquaculture (WGEIA) will be renamed Working Group on Risks, Environmental Interactions of Aquaculture (WGREIA)	Terje Svåsand, Norway	Ellen Sofie Grefsrud, Norway

### *Change of Chairs*

AFFILIATION (SG)	EXPERT GROUPS	CHAIR – OUTGOING	CHAIR – INCOMING
ASG	Working Group on Application of Genetics in Fisheries and Aquaculture (WGAGFA)	Jann Thorsten Martinsohn, Germany	Naiara Rodriguez-Ezpeleta, Spain
IEASG	ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean (WGICA)	-	Martine van den Heuvel-Greve, Netherlands
EOSG <sup>Error! Bookmark not defined.</sup>	Working Group on SmartDots Governance (WGSMART)	Karen Bekaert, Belgium	Jane Aanestad Godiksen, Norway (Return)
EOSG <sup>Error! Bookmark not defined.</sup>	Working Group on Commercial Catches (WGCATCH)	Kirsten Birch Håkansson, Denmark	Estanis Mugerza, Spain
EOSG*	Working Group on Mackerel and Horse Mackerel Egg Surveys (WGMEGS)	Matthias Kloppmann, Germany	Brendan O’Hea, Ireland
EPDSG	Working Group on Operational Oceanographic products for Fisheries and Environment (WGOOFE)	Rodney Forster, UK, and Dominique Obaton, France	Francisco Campuzano, Portugal, and Tomasz Dabrowski, Ireland
EPDSG	ICES - IOC Working Group on Harmful Algal Bloom Dynamics (WGHABD)	Eileen Bresnan, UK	Dave Clarke, Ireland

EPDSG	Benthos Ecology Working Group (BEWG)	Silvana Birchenough, UK	Johan Craeymeersch, the Netherlands, and Paolo Magni, Italy
EPDSG	Working Group on Oceanic Hydrography (WGOH)	Paula Fratantoni, USA, and César González-Pola, Spain	Caroline Cusack, Ireland, and Tycjan Wodzinowski, Poland
EPDSG	Working Group on the Biology and Life History of Crabs (WGCRAB)	Martial Laurans, France	Carlos Mesquita, UK
HAPISG	Working Group on the History of Fish and Fisheries (WGHIST)	Ruth Thurstan, UK; and Emily Klein, USA	tbc
HAPISG	Working Group on Marine Habitat Mapping (WGMHM)	James Strong, UK	tbc

*Expert Groups to be dissolved by the end of 2020*

AFFILIATION (SG)	EXPERT GROUPS	CHAIR – OUTGOING	CHAIR – INCOMING
ASG	Stakeholder Workshop on the Value of Genetic and Genomic Tools for identifying species in mixed landings, fish products and by-products (WKGenoTools) - Postponed from 2019	Claudia Junge, Norway - Jann Thorsten Martinsohn, Italy	
EOSG	Planning Group on Data Needs for Assessment and Advice (PGDATA)	Joël Vigneau, France	
EOSG	Workshop on unavoidable survey effort reduction (WKUSER)-Postponed from 2017	Stan Kotwicki, US, Sven Kupschus, UK and Wayne Palsson, USA	
EOSG	The Workshop on Scale, Otolith Biochronology Archives (WKBioArc)	Deirdre Brophy, Ireland, and Martha Robertson, Canada	
EOSG	Workshop on Innovative Fishing Gear (WKING)	Antonello Sala, Italy and Manu Sistiaga, Norway	
EOSG	The Second Workshop on Populating the RDBES data model (WKRDB-POP2)	David Currie, Ireland and Edvin Fuglebakk, Norway	
EOSG	The Second Workshop on Estimation with the RDBES data model (WKRDB-EST2)	Nuno Prista, Sweden and Kirsten Birch Håkansson, Denmark	
EPDSG	Workshop on Scallop Aging (WKSA)	David Palmer, UK, and Karen Vanstaen, UK	
HAPISG	Working Group on Methods for Estimating Discard Survival (WGMEDS)	Thomas Catchpole, UK, and Sebastian Uhlmann, Belgium	
HAPISG	Workshop on Global Ocean Social Sciences (WKGLOSS)	Olivier Thebaud, France, Jörn Schmidt, Germany, Denis Bailly, France	
IEASG	Third Workshop on integrated trend analyses in support to integrated ecosystem assessment (WKINTRA3)	Benjamin Planque, Norway, and Saskia Otto, Germany	

IEASG	Workshop on methods and guidelines to link human activities, pressures and state of the ecosystem in Ecosystem Overviews (WKTRANSPARENT)	Mette Skern-Mauritzen, Norway, and Henn Ojaveer, Denmark
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### 2021 workshops

AFFILIATION	WORKSHOP NAME	CHAIR - OUTGOING	COMMENTS
EOSG	Workshop 2 on the identification of clupeid larvae (WKIDCLUP2)	Matthias Kloppmann, Germany	
EOSG <sup>Error! Book-mark not defined.</sup>	Fourth Workshop on Optimization of Biological Sampling (WKBIOPTIM4)	Gwladys Lambert, UK, Isabella Bitetto, Italy and Patricia Gonçalves, Portugal	
EOSG <sup>Error! Book-mark not defined.</sup>	Workshop on Operational Implementation of Stomach Sampling (WKOISS)	Pierre Cresson, France and Maria Valls, Spain	
EOSG <sup>Error! Book-mark not defined.</sup>	Workshop on Acoustic Backscatter Models (WKABM) <sup>1,2</sup>	Sven Gastauer, United States	
EOSG <sup>Error! Book-mark not defined.*</sup>	Workshop on Age reading of Sea bass ( <i>Dicentrarchus labrax</i> ) 2 (WKARDL2)*	Mary Brown, UK; Valerio Visconti, UK	
EOSG <sup>Error! Book-mark not defined.*</sup>	Workshop on Age estimation of European anchovy ( <i>Engraulis encrasicolus</i> ) (WKARA3)*	Gualtiero Basilone, Italy; Andrés Uriarte, Italy	
EOSG*	Workshop on Adult Egg Production Methods Parameters estimation in Mackerel and Horse Mackerel (WKAEPM)	Maria Korta, Spain	
EOSG*	Workshop on Mackerel, Horse Mackerel and Hake Eggs Identification and Staging (WKMACHIS)	Matthias Kloppmann, Germany	
HAPISG	Workshop on Transboundary issues in marine spatial planning (WKTBMIP)	Roland Cormier, Germany; Lodewijk Abspoel, the Netherlands; and Andrew Minkiewicz, United States,	
HAPISG	Workshop on Predictive Habitat Modelling (WKPHM)	Laura Robson, UK; and Chris Rooper, Canada (tbc)	
EPDSG	Workshop on Workshop on Scallop Aging 2 (WKS2) tbc	Dave Palmer, UK, and Karen Vanstaen, UK (tbc)	

<sup>1</sup> [Parented by the Data Science and Technology Steering Group from 1 January 2021](#)

<sup>2</sup> Resolution was approved in 2020, but the workshop will take place in 2021

\*Resolution pending approval



## Annex 2: Full list of ICES Expert Groups

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### Expert Groups under Aquaculture Steering Group

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
1	<a href="#">Working Group on Pathology and Diseases of Marine Organisms</a>	WGPDMO	Ryan Carnegie, USA	2019	2021	11	9
2	<a href="#">Working Group on Social and Economic Dimensions of Aquaculture</a>	WGSEDA	Gesche Krause, Germany	2018	2020	26	13
3	<a href="#">Working Group on Application of Genetics in Fisheries and Aquaculture</a>	WGAGFA	Jann Martinsohn, Italy	2018	2020	33	14
4	<a href="#">Working Group on Scenario Planning on Aquaculture</a>	WGSPA	Ben Halpern, USA	2018	2021	Pending meeting	Pending meeting
5	<a href="#">Working Group on Environmental Interactions of Aquaculture</a>	WGEIA	Terje Svåsand, Norway	2018	2020	17	6
6	<a href="#">Working Group on Ecological Carrying Capacity in Aquaculture</a>	WGECCA	Jeffrey Fisher, Ireland	2019	2021	13	5
7	<a href="#">Working Group on Open Ocean Aquaculture</a>	WGOOA	Bela Buck, Germany	2019	2021	19	9
9	<a href="#">Stakeholder Workshop on the Value of Genetic and Genomic Tools for identifying species in-mixed landings, fish products and by-products</a>	WKGenoTools	Claudia Junge, Norway Jann Martinsohn, Italy	2019	2020 (postponed)	10	5

**Expert Groups under Ecosystem Processes and Dynamics Steering Group**

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
1	<a href="#">Working Group on Biodiversity Science</a>	WGBIODIV	Christopher Lynam, UK, and Andrea Belgrano, Sweden	2019	2021	18	9
2	<a href="#">Working Group on Integrated Morphological and Molecular Taxonomy</a>	WGIMT	Jasmin Renz, Germany, and Elaine Fileman, UK	2020	2022	23	11
3	<a href="#">Benthos Ecology Working Group</a>	BEWG	Silvana Birchenough, UK	2018	2020	24	11
4	<a href="#">Working Group on Phytoplankton and Microbial Ecology</a>	WGPME	Marie Johansen, Sweden and Rowena Stern, UK	2019	2021	20	11
5	<a href="#">Working Group on Crangon fisheries and life history</a>	WGCRAN	Claudia Günther, Germany	2019	2021	pending report	pending report
6	<a href="#">Working Group on Zooplankton Ecology</a>	WGZE	Sophie Pitois, UK, and Lidia Yebra, Spain	2018	2020	27	14
7	<a href="#">Working Group on Oceanic Hydrography</a>	WGOH	Paula Fratantoni, USA, and César González-Pola, Spain	2018	2020	21	14
8	<a href="#">Working Group on the Biology and Life History of Crabs</a>	WGCRAb	Carlos Mesquita, UK	2020	2022	pending meeting	pending meeting
9	<a href="#">Working Group on Resilience and Marine Ecosystem Services</a>	WGRMES	Sebastian Villasante, Spain, and Andrea Belgrano, Sweden	2018	2020	pending meeting	pending meeting
10	<a href="#">ICES IOC Working Group on Harmful Algal Bloom Dynamics</a>	WGHABD	Eileen Bresnan, UK	2018	2020	19	14
11	<a href="#">Working Group on Cephalopod Biology and Life History</a>	WGCEPH	Graham Pierce, Spain, Ana Moreno, Portugal, and Daniel Oesterwind, Germany	2020	2022	42	10
12	<a href="#">Working Group on Fisheries-Induced Evolution</a>	WGEVO	Raul Primicerio, Norway	2019	2021	pending meeting	pending meeting
13	<a href="#">Working Group on Operational Oceanographic Products for Fisheries and the Environment</a>	WGOOFE	Tomasz Dabrowski, Ireland; and Francisco Javier Campuzano, Portugal	2021	2023	pending meeting	pending meeting

14	<a href="#">Working Group entitled “Towards a EUROpean OBservatory of the non-indigenous calanoid copepod <i>Pseudodiaptomus marinus</i>”</a>	WGEUROBUS	Marco Uttieri, Italy, and Arantza Iriarte, Spain	2019	2021	pending meeting	pending meeting
16	<a href="#">Working Group on Seasonal-to-Decadal Prediction of Marine Ecosystems</a>	WGS2D	Mark Payne, Denmark	2017	2019	pending	pending
17	<a href="#">Scallop Assessment Working Group</a>	WGScallop	Lynda Blackadder, UK	2019	2021	pending meeting	pending meeting
18	<a href="#">Working Group on Marine Mammal Ecology</a>	WGMME	Anders Galatius, Denmark, and Anita Gilles, Germany	annual		32	13
19	<a href="#">OSPAR/HELCOM/ ICES/Working group on Seabirds</a>	JWGBIRD	Ian Mitchell, UK; Nele Markones, Germany; Volker Dierschke, Germany	annual		pending	pending
20	<a href="#">Workshop on Scallop Aging</a>	WKSA	David Palmer, UK, and Karen Vanstaen, UK	annual		21	5
21	<a href="#">ICES/ PICES Working Group on Small Pelagic Fish</a>	WGSPF	Myron Peck, Germany (ICES), Ignacio Catalan, Spain (ICES), Ryan Rykaczewski, USA (PICES), and Akinori Takasuka, Japan (PICES)	2020	2022	31	18
22	<a href="#">ICES-PICES Working Group on Impacts of Warming on Growth Rates and Fisheries Yields</a>	WGGRAFY	C. Tara Marshall, UK (ICES), Paul Spencer, USA (PICES), Alan Baudron, UK (ICES) and John Morrongiello, Australia	2020	2022	30	11
23	ICES/ PICES Working Group on Ocean Negative Carbon Emission	WGONCE		2021	2023	pending meeting	pending meeting

**Expert Groups under Human Activities, Pressures and Impacts Steering Group**

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
1	<a href="#">Working Group on Marine Benthos and Renewable Energy Developments</a>	WGMBRED	Jan Vanaverbeke, Belgium, and Joop Coolen, the Netherlands	2019	2021	21	10
2	<a href="#">Working Group on Marine Renewable Energy</a>	WGMRE		2017	2019	pending	pending
3	<a href="#">Working Group for Marine Planning and Coastal Zone Management</a>	WGMP CZM	Andrea Morf, Sweden, and Catriona Nic Aonghusa, Ireland	2020	2022	pending report	pending report
4	<a href="#">Working Group on the Effects of Extraction of Marine Sediments on the Marine Ecosystem</a>	WGEXT	Keith Cooper, UK	2020	2022	pending report	pending report
5	<a href="#">Working Group on Biological Effect of Contaminants</a>	WGBEC	Juan Bellas, Spain, and Steven Brooks, Norway	2019	2021	18	11
6	<a href="#">Marine Chemistry Working Group</a>	MCWG	Koen Parmentier, Belgium	2019	2021	12	9
7	<a href="#">Working Group on Marine Sediments in Relation to Pollution</a>	WGMS	Maria Belzunce, Spain, and Claire Mason, UK	2018	2020	12	6
8	<a href="#">Working Group on Economics</a>	WGECON	Arina Motova, UK, Rasmus Nielsen, Denmark, and Olivier Thebaud, France	2018	2020	31	11
9	<a href="#">Working Group on Marine Litter</a>	WGML	Thomas Maes, UK; Francois Galignani, France; and Andy Booth, Norway	2018	2020	pending meeting	pending meeting
10	<a href="#">ICES Working Group on Introduction and Transfers of Marine Organisms</a>	WGITMO	Cynthia McKenzie, Canada	2019	2021	44	23
11	<a href="#">ICES/IOC/IMO Working Group on Ballast and Other Ship Vectors</a>	WGBOSV	Lisa Drake, USA	2019	2021	28	15
12	<a href="#">Stock Identification Methods Working Group</a>	SIMWG	Christoph Stransky, Germany	2020	2022	14	7
13	<a href="#">Working Group on the value of Coastal Habitats for Exploited Species</a>	WGVHES	Olivier Le Pape, France, and David Eggleston, USA	2019	2021	13	6



	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
14	<a href="#">Working Group on Spatial Fisheries Data</a>	WGSFD	Roi Martinez, UK, and Neil Campbell, UK	2019	2021	pending report	pending report
15	<a href="#">Working Group on Marine Habitat Mapping</a>	WGMHM	James Strong, UK	2018	2020	10	8
16	<a href="#">Methods Working Group</a>	MGWG	Arni Magnusson, ICES, and Christopher Legault, USA	2017	2019	pending	pending
17	<a href="#">Working Group on the History of Fish and Fisheries</a>	WGHIST	Ruth Thurstan, Australia and Emily Klein, USA	2018	2020	pending report	pending report
18	<a href="#">Working Group on Multispecies Assessment Methods</a>	WGSAM	Sarah Gaichas, USA, and Alexander Kempf, Germany	2019	2021	pending meeting	pending meeting
19	<a href="#">Working Group on Methods for Estimating Discard Survival</a>	WGMEDS	Tom Catchpole, UK, and Sebastian Uhlmann, Belgium	2017	2019	15	10
20	<a href="#">Working Group on Fisheries Benthic Impact and Trade-offs</a>	WGFBIT	Tobias van Kooten, Netherlands; Ole Ritzau Eigaard, Denmark; and Gert van Hoey, Belgium	2018	2020	pending report	pending report
21	<a href="#">Working Group on Spatial Fisheries Data Governance</a> <b>Error! Bookmark not defined.</b>	WGSFDGOV <b>Error! Bookmark not defined.</b>	Christian von Dorrien, Germany	2020	2022	pending report	pending report
22	<a href="#">Working Group on Cumulative Effects Assessment Approaches in Management</a>	WGCEAM	Vanessa Stelzenmüller, Germany, Roland Cormier, Germany, and Gerjan Piet, the Netherlands	2019	2021	pending report	pending report
23	<a href="#">Working Group on Offshore Wind Development and Fisheries</a>	WGOWDF	Andy Lipsky, USA and Chair (TBD), Europe	2020	2022	28	5
24	<a href="#">Working Group on Shipping Impacts in the Marine Environment</a>	WGSHP	Cathryn Murray, Canada, and Ida-Maja Hassellöv, Sweden	2019	2021	24	11
25	<a href="#">Working Group on Bycatch of Protected Species</a>	WGBYC	Kelly Macleod, UK and Sara Königson, Sweden	annual		38	19
26	<a href="#">ICES/NAFO Joint Working Group on Deep-water Ecology</a>	WGDEC	Laura Robson, UK	annual		25	11
27	<a href="#">Working Group on the Ecosystem Effects of Fishing Activities</a>	WGECO	Brian Smith, USA, and Tobias van Kooten, the NL -	annual		13	9

EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
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\* Parented by the Data Science and Technology Steering Group from 1 January 2021

28	<a href="#">Workshop on fisheries Emergency Measures to minimize BYCatch of short-beaked common dolphins in the Bay of Biscay and harbor porpoise in the Baltic Sea</a>	WKEMBYC	Vincent Ridoux, France	annual	27	10
29	<a href="#">Workshop on Fish of Conservation and Bycatch Relevance</a>	WKCOFIBYC	Maurice Clarke, Ireland	annual	pending meeting	pending meeting
30	<a href="#">Workshop on Transboundary issues in marine spatial planning</a>	WKTBIMP	Roland Cormier, Germany; Lode-wijk Abspoel, the Netherlands; and Andrew Minkiewicz, United States,	annual (2021)	pending meeting	pending meeting

### Expert Groups under Integrated Ecosystem Assessments Steering Group

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
1	<a href="#">Working Group on Comparative Analyses between European Atlantic and Mediterranean marine ecosystems to move towards an Ecosystem-based Approach to Fisheries</a>	WGCOMEDA	Marta Coll, Spain, Manuel Hidalgo, Spain, Hilmar Hinz, Spain and Christian Möllmann, Germany	2020	2022	31	10
2	<a href="#">Working Group on Ecosystem Assessment of Western European Shelf Seas</a>	WGEAWESS	Steven Beggs, UK and Eider Andon-egi, Spain	2020	2022	27	10
3	<a href="#">ICES/HELCOM Working Group on Integrated Assessments of the Baltic Sea</a>	WGIAB	Matilda Valman (HELCOM), Sweden, Laurene Pécuchet, Denmark, Saskia Otto, Germany and Martin Lindegren, Denmark	2019	2021	22	8
4	<a href="#">Working Group on the Integrated Assessments of the Barents Sea</a>	WGIBAR	Elena Eriksen, Norway and Anatoly Filin, Russia	2020	2022	31	2
5	<a href="#">ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean</a>	WGICA	John Bengtson (ICES), USA, Sei-Ichi Saitoh (PICES), Japan, and Hein Rune Skjoldal (PAME), Norway	2019	2021	41	10
7	<a href="#">Working Group on the Integrated Assessments of the Norwegian Sea</a>	WGINOR	J. Óskarsson, Iceland, and Per Arneberg, Norway	2019	2021	Meeting pending	Meeting pending
8	<a href="#">Working Group on Integrated Assessments of the North Sea</a>	WGINOSE	Andy Kenny, UK and Erik Olsen, Norway	2017	2020	14	8

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
9	<a href="#">Working Group on Integrative, Physical-biological, and Ecosystem Modelling</a>	WGIPEM	Morgane Travers-Trolet, France and Marie Maar, Denmark	2019	2021	Meeting cancelled	Meeting cancelled
11	<a href="#">Working Group on Maritime Systems</a>	WGMARS	Patricia M. Clay, USA and Johanna Ferretti, Germany	2020	2022	23	8
12	<a href="#">Working Group on Northwest Atlantic Regional Sea</a>	WGNARS	Geret DePiper, USA and Robert Gregory, Canada	2020	2022	31	3
13	<a href="#">Working Group on SOCIAL indicators</a>	WGSOCIAL	Lisa L. Colburn, USA, Amber Himes-Cornell, FAO, Marloes Kraan, the Netherlands	2018	2020	56	Report pending
14	<a href="#">Workshop on integrated trend analyses in support to integrated ecosystem assessment</a>	WKINTRA3	Saskia Otto, Germany, Benjamin Planque, Norway	2020	2020	Meeting pending	Meeting pending
15	<a href="#">Working Group on Common Ecosystem Reference Points</a>	WGCERP	Mary Hunsicker, USA, Xiujuan Shan, China, Benjamin Planque, Norway, and Saskia Otto, Germany	2019	2021	Meeting pending	Meeting pending
16	<a href="#">Working Group on Integrated Ecosystem Assessment of the Greenland Sea</a>	WGIEAGS	Jesper Boje, Denmark/Greenland, and Colin Stedmon, Denmark	2020	2022	22	4
17	<a href="#">Working Group on Balancing Economic, Social and Ecological Objectives</a>	WGBESEO	David Goldsborough, Netherlands, David Langlet, Sweden, and Paulina Ramirez-Monsalve, Denmark	2020	2022	23	13
18	<a href="#">Workshop on methods and guidelines to link human activities, pressures and state of the ecosystem in Ecosystem Overviews</a>	WKTRANSPAR-ENT	Henn Ojaveer, Denmark, and Mette Skern-Mauritzen, Norway	2020	2020	Meeting pending	Meeting pending
19	<a href="#">Working Group on Integrated Assessment of the Azores</a>	WGIAZOR	Mario Pinho, Portugal, and Maria de Fatima Borges, Portugal	2020	2022	18	2
20	<a href="#">Joint ICES/PICES Working Group on Integrated Ecosystem Assessment of the Northern Bering Sea-Chukchi Sea</a>	WGIEANBS-CS	Elizabeth Logerwell, USA, and Yury Zuenko, Russia	2021	2023	Meeting pending	Meeting pending

**Expert Groups under Ecosystem Observation Steering Group**

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
1	<a href="#">International Bottom Trawl Survey Working Group</a>	IBTSWG	Ralf van Hal, Netherlands, and Pascal Laffargue, France,	2019	2021	pending report	pending report
2	<a href="#">Planning Group on Data Needs for Assessments and Advice</a>	PGDATA	Joël Vigneau	2018	2020	9	9
3	<a href="#">Working Group on Acoustic and Egg Surveys for Sardine and Anchovy in ICES Areas VII, VIII and IX</a>	WGACEGG	Jeroen van der Kooij, U.K and Maria Manuel Angélico, Portugal	2020	2022	pending meeting	pending meeting
4	<a href="#">Working Group on Atlantic Fish Larvae and Eggs Surveys</a>	WGALES	Patrick Polte, Germany, Richard D.M. Nash, Norway	2020	2022	pending meeting	pending meeting
5	<a href="#">Working Group on Beam Trawl Surveys</a>	WGBEAM	Ingeborg de Boois, the Netherlands	2020	2022	13	8
6	<a href="#">Baltic International Fish Survey Working Group</a>	WGBIFS	Olavi Kaljuste, Sweden	2018	2020	pending report	pending report

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
7	<a href="#">The Working Group on Biological Parameters</a> Error! Bookmark not defined.	WGBIOPError! Bookmark not defined.	Pierluigi Carbonara, Italy, Cindy van Damme, the Netherlands and Julie Davies, Denmark	2018	2020	pending meeting	pending meeting
8	<a href="#">Working Group on Commercial Catches</a> Error! Bookmark not defined.	WGCATCHError! Bookmark not defined.	Kirsten Birch Hakansson, Denmark, and Estanis Mugerza, Spain	2020	2022	pending meeting	pending meeting
9	<a href="#">Working Group on Electrical Trawling</a>	WGELECTRA	Adriaan Rijnsdorp, the Netherlands, Mattias van Opstal, Belgium	2018	2020	12	5
10	<a href="#">Working Group on Fisheries Acoustics, Science and Technology</a> Error! Bookmark not defined.	WGFASSTError! Bookmark not defined.	Richard O'Driscoll, NZ	2020	2022	102	20
11	<a href="#">ICES-FAO Working Group on Fishing Technology and Fish Behaviour</a>	WGFTFB	Daniel Stepputtis, Germany, Antonello Sala, Italy and Pingguo He, USA	2020	2022	pending report	pending report
<b>* Parented by the Data Science and Technology Steering Group from 1 January 2021</b>							
12	<a href="#">Working Group on International Deep Pelagic Ecosystem Surveys</a>	WGIDEEPS	Hannes Höffle, Norway, and Matthias Bernreuther, Germany	2020	2020	pending report	pending report
13	<a href="#">Working Group of International Pelagic Surveys</a>	WGIPS	Bram Couperus, The Netherlands, and Michael O'Malley, Ireland	2019	2021	25	11

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
14	<a href="#">Working Group on Improving use of Survey Data for Assessment and Advice</a>	WGISDAA	Sven Kupschus, UK	2018	2020	pending meeting	pending meeting
15	<a href="#">Working Group on Integrating Surveys for the Ecosystem Approach</a>	WGISUR	Ralf van Hal, the Netherlands	2018	2020	pending meeting	pending meeting
16	<a href="#">Working Group on Mackerel and Horse Mackerel Egg Surveys</a>	WGMEGS	Matthias Kloppmann, Germany and Gersom Costas, Spain	2018	2020	pending report	pending report
17	<a href="#">Working Group on Nephrops Surveys</a>	WGNEPS	Jennifer Doyle, Ireland	2019	2021	pending meeting	pending meeting
18	<a href="#">Working Group on Recreational Fisheries Surveys</a> Error! Bookmark not defined.	WGRFS	Kieran Hyder, UK and Keno Ferter, Norway	2020	2022	pending report	pending report
19	<a href="#">Workshop on Scale, Otolith Biochronology Archives</a>	WKBioArc	Deirdre Brophy, Ireland, and Martha Robertson, Canada	2020	2020	pending report	pending report
20	<a href="#">Working Group on SmartDots Governance</a> Error! Bookmark not defined.	WGSMA	Julie Coad Davies, Denmark and Jane Aanestad Godiksen, Norway	2019	2021	pending meeting	pending meeting

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
21	<a href="#">Working Group on DATRAS Governance</a> Error! Bookmark not defined.	WGDGError! Bookmark not defined.	Ingeborg de Boois, Netherlands	2020	2022	7	4
22	<a href="#">Working group on machine learning in marine science</a> Error! Bookmark not defined.	WGMLEARNError! Bookmark not defined.	Ketil Malde, Norway, and Jean-Olivier Irisson, France.	2019	2021	pending meeting	pending meeting
23	<a href="#">Working Group on Technology Integration for Fishery-Dependent Data</a> Error! Bookmark not defined.	WGTIFDError! Bookmark not defined.	Brett Alger, United States and Lisa Borges	2019	2021	pending meeting	pending meeting
24	<a href="#">Working Group on Surveys on Ichthyoplankton in the North Sea and adjacent Seas</a>	WGSINS	Norbert Rohlf, Germany	2019	2021	pending meeting	pending meeting
<b>* Parented by the Data Science and Technology Steering Group from 1 January 2021</b>							
25	<a href="#">Workshop on unavoidable survey effort reduction</a>	WKUSER	Stan Kotwicki, US, Sven Kupschus, UK and Wayne Palsson, USA	2020	2020	45	7
26	<a href="#">Workshop on Acoustic Backscatter Models</a> Error! Bookmark not defined.	WKABMError! Bookmark not defined.	Sven Gastauer, United States	2021	2021	pending meeting	pending meeting



	EG name	EG Acronym	EG Chair	Year start	Year end	Num- ber at- tendi ng (2020)	Number of countries (2020)	
27	<a href="#">Working Group on Acoustic Data Governance</a> Error! Bookmark not defined.	WGAcoousticGov	Error! Bookmark not defined.	Ciaran O'Donnell, Ireland	2020	2022	pend- ing re- port	pending re- port
28	<a href="#">Steering Committee for the Regional Database and Estimation System</a> Error! Bookmark not defined.	SCRDB	Error! Bookmark not defined.	David Currie, Ireland, and Katja Ringdahl, Sweden	2020	2020	pend- ing meet- ing	pending meet- ing
29	Fourth Workshop on Optimization of Biological Sampling Error! Book- mark not defined.	WKBIOPTIM4	Error! Bookmark not defined.	Gwladys Lambert, UK, Isabella Bitetto, Italy, and Patricia Gonçalves, Portugal	2021	2021	pend- ing meet- ing	pending meet- ing
30	The Second Workshop on Populating the RDBES data model	WKRDB-POP2		David Currie, Ireland and Edvin Fuglebakk, Norway	2020	2020	pend- ing re- port	pending re- port
31	<a href="#">Workshop on Innovative Fishing Gear</a>	WKING		Antonello Sala, Italy and Manu Sistiaga, Norway	2020	2020	pend- ing re- port	pending re- port
32	<a href="#">Workshop 2 on the identification of clupeid larvae</a>	WKIDCLUP2		Matthias Kloppmann, Germany	2020	2020	pend- ing re- port	pending re- port
33	<a href="#">Working Group on Northwest Atlantic Ecosystem Observations</a>	WGNAEO		Philip Politis, USA, and Don Clark, Canada	2020	2022	22	2
34	Workshop on Operational Implementation of Stomach Sampling (WKOISS) Error!	WKOISS	Error! Bookmark not defined.	Pierre Cresson, France and Maria Valls, Spain	2021	2021	Pend- ing meet- ing	Pending meet- ing

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
35	Workshop on Age reading of Sea bass ( <i>Dicentrarchus labrax</i> ) <a href="#">Bookmark not defined.</a>	WKARDL2 <a href="#">Error! Bookmark not defined.</a>	Mary Brown, UK and Valerio Visconti, UK	2021	2021	Pending meeting	Pending meeting
36	Workshop on Age estimation of European anchovy ( <i>Engraulis encrasicolus</i> ) <a href="#">Bookmark not defined.</a>	WKARA3 <a href="#">Error! Bookmark not defined.</a>	Gualtiero Basilone, Italy and Andrés Uriarte, Italy	2021	2021	Pending meeting	Pending meeting
37	Workshop on Estimation with the RDBES data model	WRDB-EST2	Nuno Prista, Sweden and Kirsten Birch Håkansson, Denmark	2020	2020	Pending report	Pending report
<b>* Parented by the Data Science and Technology Steering Group from 1 January 2021</b>							
38	Working Group on Size and Species Selection Experiments	WGSSSE	Haraldur Arnar Einarsson, Iceland/FAO, and Michael Pol, USA	2020	2022	Pending meeting	Pending meeting
39	Workshop on Adult Egg Production Methods Parameters estimation in Mackerel and Horse Mackerel	WKAEPM	Maria Korta, Spain	2021	2021	Pending meeting	Pending meeting
40	Workshop on Mackerel, Horse Mackerel and Hake Eggs Identification	WKMACHIS	Matthias Kloppmann, Germany	2021	2021	Pending meeting	Pending meeting

EG name	EG Acronym	EG Chair	Year start	Year end	Num-ber at-tendi-ng (2020)	Number of countries (2020)
and Staging (WKMACHIS)						

**Expert groups under Fisheries Resources Steering Group**

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
1	<a href="#">Arctic Fisheries Working Group</a>	AFWG	Daniel Howell	annual	-	18	4
2	<a href="#">Herring Assessment Working Group for the Area South of 62° N</a>	HAWG	Valerio Bartolino - Afra Egan	annual	-	March - 28	8
3	<a href="#">Joint NAFO/ICES Pandalus Assessment Working Group</a>	NIPAG	Ole Ritzau Eigaard - Katherine Sosebee	annual	-	March - 6 October - tbc	3 tbc
4	<a href="#">Northwestern Working Group</a>	NWWG	Kristján Kristinsson	annual	-	15	4
5	<a href="#">Assessment Working Group on Baltic Salmon and Trout</a>	WGBAST	Stefan Palm	annual	-	25	9
6	<a href="#">Baltic Fisheries Assessment Working Group</a>	WGBFAS	Mikaela Bergenius	annual	-	33	9
7	<a href="#">Working Group for the Bay of Biscay and the Iberian Waters Ecoregion</a>	WGBIE	Ching Villanueva - Lisa Readdy	annual	-	22	5
8	<a href="#">Working Group for the Celtic Seas Ecoregion</a>	WGCSE	Sofie Nimmegeers - Timothy Earl	annual	-	28	5
9	Working Group on North-west Atlantic Mackerel Ecology and Assessment	WGNAM	Kiersten Curti and Stephane Plourde	2020	2022	Meeting postponed to 2021	

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
10	<a href="#">Working Group on the Biology and Assessment of Deep-sea Fisheries Resources</a>	WGDEEP	Elvar Halldor Hallfredsson - Pascal Lorange	annual	-	20	8
11	<a href="#">Working Group on Science to Support Conservation, Restoration and Management of Diadromous Species</a>	WGDIAD	Dennis Ensing - Hugo Maxwell	2018 - 2019	2020	Pending report	Pending report
12	<a href="#">Joint EIFAAC/ICES/GFCM Working Group on Eels</a>	WGEEL	Alan Walker	annual	-	43	16
13	<a href="#">Working Group on Elasmobranch Fishes</a>	WGEF	Jurgen Batsleer Pascal Lorange	annual	-	31	10
14	<a href="#">Working Group on Southern Horse Mackerel, Anchovy, and Sardine</a>	WGHANSA	Alexandra (Xana) Silva	annual	-	May - 24  November – Pending meeting	4
15	<a href="#">Working Group on Mixed Fisheries Advice</a>	WGMIXFISH-ADV	Claire Moore	annual	-	Pending meeting	
16	<a href="#">Working Group on Mixed Fisheries Advice Methodology</a>	WGMIXFISH-METH	Claire Moore	annual	-	21	11
17	<a href="#">Working Group on North Atlantic Salmon</a>	WGNAS	Martha Robertson	annual	-	31	11

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
18	<a href="#">Working Group on the Assessment of Demersal Stocks in the North Sea and Skagerrak</a>	WGNSSK	José De Oliveira	annual	-	34	8
19	Working Group on Transparent Assessment Framework Governance	WGTAFGOV	Nils Olav Handegard	2020	2022	5	3
20	<a href="#">Working Group on Widely Distributed Stocks</a>	WGWIDE	Gudmundur J. Oskarsson	annual	-	38	9
21	<a href="#">Working Group to develop and test assessment methods for Sea trout populations (anadromous <i>Salmo trutta</i>)</a>	WGTRUTTA	Johan Höjesjö and Alan Walker	2020	2023	Pending report	Pending report
22	<a href="#">Benchmark Workshop for Demersal species</a>	WKDEM	Richard Nash and Daniel Howell	Annual		23	5
23	<a href="#">Benchmark Workshop for Flatfish stocks in the North Sea and Celtic Sea</a>	WKFlatNSCS	Meaghan Bryan and Timothy Earl	Annual		21	8
24	<a href="#">Benchmark Workshop on Greater Silver Smelt – Data compilation meeting</a>	WKGSS	Pamela Woods	Annual		8	4
25	<a href="#">Benchmark Workshop on herring (<i>Clupea harengus</i>)</a>	WKCLUB	Noel Holmgren	Annual		Pending report	Pending report

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
26	Inter-benchmark Process (IBP) on Baltic Sprat ( <i>Sprattus sprattus</i> ) and Herring	IBPBASH	Bjarte Bogstad	Annual		10	6
27	<a href="#">Second Workshop on Data-Limited Stocks of Short-Lived Species</a>	WKDLSSLS2	Andrés Uriarte and Mollie Elizabeth Brooks	Annual		16	5
28	<a href="#">The scoping workshop on next generation of mixed fisheries advice</a>	WKMIXFISH	Paul Dolder	Annual		36	8
29	Third Workshop on guidelines for management strategy evaluations	WKGMSE3	José De Oliveira	Annual		Meeting pending	
30	<a href="#">Workshop of Fisheries Management Reference Points in a Changing Environment</a>	WKRPCHANGE	Anna Rindorf, Jeremy Collie and Daniel Howell	Annual		20	9
31	<a href="#">Workshop on Atlantic chub mackerel (<i>Scomber colias</i>)</a>	WKCOLIAS	Alexandra Silva and Teresa G. Santamaría	Annual		18	2
32	<a href="#">Workshop on EU regulatory area options for VME protection</a>	WKEUVME	Ellen Kenchington and Peter Hopkins	Annual		24	9
33	<a href="#">Workshop on guidelines and methods for the evaluation of rebuilding plans</a>	WKREBUILD	Vanessa Trijoulet and Martin Pastors	Annual		25	9

	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
34	Workshop on Management Strategy Evaluation of Mackerel	WKMSEMAC	Andrew Campbell	Annual		16	9
35	<a href="#">Workshop on Model Ensembles for Stock Assessment and Advice</a>	WKENSEMBLE	Liz Brooks, C��il��n Minto and Ernesto Jardim	Annual		24	7
36	Workshop on MSE development	WKMSDEV	Daniel Howell	Annual		Postponed to 2021	
37	Workshop on Standards and Guidelines for fisheries dependent data	WKDSG	Edvin Fuglebak and Steven Mackinson	Annual		Meeting pending	
38	<a href="#">Workshop on stock identification of North Sea Cod</a>	WKNSCODID	Steve Cadrin	Annual		26	6
39	Workshop on the distribution and bycatch management options of listed deep-sea shark species	WKSHARK6	Maurice Clarke	Annual		12	7
40	<a href="#">Workshop on the Ecosystem Based Management of the Baltic Sea</a>	WKBALTIC	R��diger Voss and David Reid	Annual		26	8
41	<a href="#">Workshop on the North Sea reopening protocol</a>	WKNSTROP	Alexander Kempf and Jos�� De Oliveira	Annual		16	6



	EG name	EG Acronym	EG Chair	Year start	Year end	Number attending (2020)	Number of countries (2020)
42	<a href="#">Workshop on the Review and Future of State Space Stock Assessment Models in ICES</a>	WKRFSAM	Noel Cadigan	Annual		22	6
43	<a href="#">Workshop on the temporal migration patterns of European eel</a>	WKEELMIGRATION	Alan Walker	Annual		16	9
44	Workshop on the use of surveys for stock assessment and Reference Points for Rays and Skates	WKSKATE	Graham Johnston and Jurgen Batsleer	Annual		Meeting pending	
45	Workshop on Training for the Transparent Assessment Framework: Bay of Biscay and the Iberian Coast	WKTAF-BI	Arni Magnusson and Colin Millar	Annual		5	2
46	Workshop on Training for the Transparent Assessment Framework: Baltic Sea and Norway	WKTAF-BN	Arni Magnusson and Colin Millar	Annual		7	4
47	<a href="#">Workshop to review and progress the reported lists of EU's MSFD Descriptor 3</a>	WKD3LISTS	Maurice Clarke	Annual		Pending report	Pending report
48	Workshop to review and update OSPAR status assessments for stocks of listed shark, skates and rays in support of OSPAR	WKSTATUS	Paddy Walker	Annual		13	7

### Annex 3: ICES co-sponsored symposia 2019–2022

YEAR	DATE	TITLE	RESOLUTION NO	VENUE	CONVENERS	CO-SPONSORS	SUPPORT/COMMENTS	PUBLICATION	ICES SUPPORTS & WORK ORDER
<b>2022</b>									
2022	20-24 February	International Symposium on Small Pelagic Fish: New Frontiers in Science for Sustainable Management	<b>2020/3/EPDSG01*</b>  *APPROVED 7 APRIL 2020	Lisbon, Portugal	Marta Coll (Spain, ICES), Myron Peck (Germany, ICES), Ryan Rykaczewski (USA, PICES), Ignacio Catalán (Spain, ICES), Akinori Takasuka (Japan, PICES) and Miguel Bernal (FAO-GFCM)	PICES	Financial support of <b>€10,000</b> to support travel of selected early career scientists.	<b>No IJMS requested</b>  Other peer reviewed journals planned.	Julie Kellner & Malene Eilersen  (1071-54)
<b>2021</b>									
2021	<b>New Date* 2-4 March</b>  <i>Original date 21-23 April 2020 postponed due to COVID-19</i>	International Symposium on Plastics in the Arctic and Sub-Arctic Region	<b>2018/3/HAPISG01</b>	Reykjavik, Iceland	Hrönn Jörundsdóttir, Matis, Reykjavik, and Thomas Maes, Centre for Environment, Fisheries and Aquaculture Science, Lowestoft	The Icelandic Ministry of Foreign Affairs, The Icelandic Ministry of the Environment and Resources, The Icelandic Ministry of Industry and Innovation, The Marine and Freshwater Research Institute, The Nordic Council of Ministers	Financial support of <b>€10,000</b> to fund travel support for early career scientists.	<b>A special issue IJMS requested</b>	Vivian Piil, Wojciech Wawrzynski & Terhi Minkkinen  (1071-45)
2021	<b>New Date* 3-7 May</b>  <i>Original date 11-15 May 2020 held as Oceans Past</i>	Oceans Past IX 2021	<b>2018/3/HAPISG04</b>	Ostend, Belgium	Ben Fitzhugh (USA) & Ruth Thurstan (UK)		Subsidise travel and accommodation costs for 10 Early Career Scientists from ICES member countries (500 EUR each, total <b>€5,000</b> ); Sup-	<b>IJMS not requested</b>	Julie Kellner & Malene Eilersen  (1071-50)

YEAR	DATE	TITLE	RESOLUTION NO	VENUE	CONVENERS	CO-SPONSORS	SUPPORT/COMMENTS	PUBLICATION	ICES SUPPORTS & WORK ORDER
	<i>VIII virtual meeting due to COVID-19</i>						port an ECS network-ing event during the conference (€2,000) and; Subsidise travel costs for two keynote speakers to attend from underrepresented countries further afield (€2,000)		
2021	<b>New Date* TBD May</b>  <i>Original date 25-29 May 2020 postponed due to COVID-19</i>	Marine Socio-Ecological Systems - MSEAS 2020: Navigating global change in the marine environment with socio-ecological knowledge	<b>2016/3/IEASG07</b>	Yokohama, Japan	Rich Little (Australia), Marloes Kraan (Netherlands), Mitsutaku Makino (Japan), Doug Lipton (US) and Keith Criddle (US)	PICES, ICES	Financial support of <b>€10,000</b> to fund travel support for early career scientists.  ICES IT support	<b>IJMS not requested</b>	Wojciech Wawrzynski & Alondra Sofia Rodriguez  (1071-46)
2021	14-18 June	Baltic Sea Science Congress	<b>2020/3/IEASG03*</b>  *APPROVED 7 APRIL 2020	Århus, Denmark	Professor Jacob Carstensen (chair of Scientific Committee), Associate professor Peter Grønkjær (Department of Biology), Nikolaj Reducha Andersen (Department of Bioscience), Helle Knudsen-Leerbeck (Department of Bioscience), Charlotte Hviid (Department of Bioscience), and Anne van Acker (Department of Bioscience).	Århus University	Financial support of <b>€10,000</b> to fund participation of early career scientists  ICES Communications support to advertise	<b>No IJMS requested</b>	Wojciech Wawrzynski & Karolina Reducha  (1071-56)

YEAR	DATE	TITLE	RESOLUTION NO	VENUE	CONVENERS	CO-SPONSORS	SUPPORT/COMMENTS	PUBLICATION	ICES SUPPORTS & WORK ORDER
2021	<b>New Date*</b> <b>20-24 September</b>  <i>Original date 11-15 October 2020 postponed due to COVID-19</i>	World Fisheries Congress 2020	<b>2018/3/HAPISG05</b>	Adelaide, Australia	Bronwyn Gilanders (Australia) and Tim Ward (Australia)	Brand South Australia, PIRSA, SARDI, Adelaide Convention Bureau, Adelaide Convention Centre, FRDC, CSIRO, Austral Fisheries, FMA, IMAS	Financial support of <b>€10,000</b> to fund travel support for early career scientists  ICES IT support Coordinate selection of early career scientists travel awards	The WFC2020 International Program Committee Chairs are currently exploring options for publishing proceedings from the Congress.	Julie Kellner & Anna Davies  (1071-49)
2021	26-28 October	ICES 4 <sup>th</sup> Decadal Variability of the North Atlantic and its Marine Ecosystems: 2010-2019	<b>2020/3/EPDSG02</b>  * APPROVED 7 APRIL 2020	Bergen, Norway	Kjell Arne Mork (Norway), Cesar Gonzalez-Pola (Spain), Paula Frantoni (USA), Caroline Cusack (Ireland), Stephen Dye (UK) and Barbara Berx (Scotland)	IOC-UN, NAFO	Financial support of <b>10,000€</b> to support travel of selected early career scientists  ICES Secretariat support: communications, early career selection, physical attendance	<b>No IJMS requested</b>  Dedicated volume of decadal symposium planned	Julie K, Julie KH  (1071-55)
<b>2020</b>									
<i>All 2020 Symposia were postponed due to COVID-19</i>									
<b>2019</b>									
2019	19–21 November	International Symposium on Fisheries Sustainability: Strengthening the Science-Policy Nexus	2018/3/FRSG03	Rome, Italy	Manuel Barange (Italy, FAO)	The convener is actively identifying other partner institutions and co-sponsors and sent an email to the advisory committee requesting suggestions on 1/2/2019.	Travel and subsistence support is requested for SCICOM chair Simon Jennings, the new Fisheries Resources Steering Group chair and a keynote speaker. The Secretariat may be asked to provide general professional and secretarial support to	<b>IJMS not requested</b>	Julie Kellner, Anna Davies & Malene Eilersen  (1071-47)

YEAR	DATE	TITLE	RESOLUTION NO	VENUE	CONVENERS	CO-SPONSORS	SUPPORT/COMMENTS	PUBLICATION	ICES SUPPORTS & WORK ORDER
							the SCICOM chair and the new Fisheries Resources Steering Group chair that will be attending the symposium.  Financial support of <b>€10,000.00</b> has been approved by SCICOM for early career scientists.  Finished Report.		
2019	5–7 November	Shellfish - Resources and Invaders of the North	<b>2017/3/EPISG02</b>	Tromsø, Norway	Carsten Hvingel (Norway), Gordon Kruse (USA) and Bernard Sainte-Marie (Canada)	PICES, NAFO, NEAFC	Financial support of <b>€10,000</b> to fund travel support for early career scientists as well as publication in a special edition of the ICES Journal. Secretariat support setting up a web page, handling abstract submissions and registration of participants, as well as general support for the symposium.  Finished Report.	<b>IJMS requested</b>	Julie Krogh Hallin, Henrik Larsen, Mike Drew & Terhi Minkinen  (1071-41)
2019	25-27 June	Second International Science and Policy Conference on Implementation of the Ecosystem Approach to Management in the Arctic	<b>2018/3/ IEASG04</b>	Bergen, Norway	Hein Rune Skjoldal (Norway), Lis L. Jørgensen (Norway) and Elisabeth Logerwell (USA)	The cost of the meeting will be covered by Norway through the local organizer (Institute of Marine Research in Bergen) with some contribution from PICES and	It is anticipated that little extra support from the ICES Secretariat is needed.  Finished Report.	<b>IJMS not likely</b>	Julie Kellner & Malene Eilersen  (1071-48)

YEAR	DATE	TITLE	RESOLUTION NO	VENUE	CONVENERS	CO-SPONSORS	SUPPORT/COMMENTS	PUBLICATION	ICES SUPPORTS & WORK ORDER
						possibly other sponsors (NOAA , PAME, AMAP, CAFF).			
2019	12–14 June	Challenging the scientific legacy of Johan Hjort: Time for a new paradigm shift in marine research?	2016/3/SSGE PD 06	Bergen, Norway	Olav Sigurd Kjesbu, Institute of Marine Research, Bergen, Norway; Iain Suthers, School of Biological, Earth, and Environmental Sciences, University of South Wales, Australia; Vera Schwach, NIFU, Nordic Institute for Studies in Innovation, Research and Education, Oslo, Norway, and Jennifer Hubbard, Department of History, Ryerson University, Toronto, Canada.	The symposium will be funded by a conference fee and support will be requested from the Norwegian Ministry of Fisheries and Coastal Affairs, ICES, and other organizations and governmental agencies, such as The International Commission for the History of Oceanography (ICHO) and the Research Council of Norway.	Financial support of €10,000.00 approved by SCICOM for early career scientists.  Finished Report	<b>A special issue IJMS requested</b>	Maria Lifentseva & Anna Davies  (1071-41)
2019	3–4 June	NASCO Symposium: Managing the Atlantic Salmon in a Rapidly Changing Environment – Management Challenges and Possible Responses	2016/3/SSGE PD05	Tromsø, Norway	TBA	NPAFC and NASCO. NASCO and NPAFC have made budgetary provision to support the symposium	ICES support for the Book of Abstracts, travel and subsistence of ICES participants (HoSS, SCICOM, Secretariat).  Finished Report.	IJMS requested	Lotte Worsøe Clausen & Liese Carleton

Fritz W Köster (ICES President),  
 William Karp (ICES first Vice-President),  
 Anne Christine Brusendorff (ICES General  
 Secretary),  
 HC Andersens Boulevard 44-46,  
 1553 Copenhagen V,  
 DENMARK

8th October 2020

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*Foras na Mara*  
*Marine Institute*

**REF. ICES Annual Science Conference 2022**

Dear Fritz, Bill and Anne Christine,

The delegates for Ireland wish to inform you and Council that Ireland would be delighted to host the ICES Annual Science Conference (ASC) in 2022. Ireland has hosted the ICES ASC on two occasions (1969 and 1993) and it is now time to once again mark our commitment to ICES and its valuable work.

Ireland joined ICES in 1925 and continues to be a strong supporter of the organisation. We provide a broad range of dedicated marine scientists that make a valuable contribution to the leadership, advisory, scientific and data work of ICES. Ireland greatly values the work of ICES which is critical to support the sustainable use of our seas and oceans

Ireland views the ASC as an important gathering of the ICES community that provides opportunities for marine scientists to present and discuss the latest marine science, develop new ideas, and establish partnerships. The ASC also provides opportunities for everyone, from students and early career scientists to senior scientists and leaders of research institutes, academia and other scientific organizations to showcase their work, and find out how to contribute to and engage with ICES.

The venue will be Dublin Castle and with the support of our parent Government Department, we have held the venue for the period 10<sup>th</sup> to 16<sup>th</sup> September 2022. We can provide meeting rooms in Dublin Castle for additional ICES business that may be required before and after the ASC.

We look forward to working closely with ICES in preparing for the ASC 2022 and to welcoming the ICES community to Dublin.

Yours Sincerely,

**Paul L. Connolly**  
**ICES Delegates for Ireland**

**Ciaran Kelly**

From: Dr. Cisco Werner  
NOAA Fisheries (NMFS) Chief Science Advisor and Director of Scientific Programs

Mr. Adam Bloomquist  
U.S. Department of State, Office of Ocean and Polar Affairs

To: Dr. Fritz Köster (ICES President), Dr. Chul Park (PICES Chair), Dr. Anne Christine Brusendorff (ICES General Secretary) and Dr. Sonia Batten (PICES Executive Director)

Cc: Dr. Bill Karp (ICES President Elect), Dr. Enrique Curchitser (PICES Vice-Chair), Dr. Jon Hare (U.S. ICES Delegate), Dr. Mike Seki (U.S. PICES Delegate)

Date: 15 October 2020

Re: U.S.-hosted Joint ICES/PICES 2023 Conference

Dear Colleagues:

During the last couple of years, the idea of holding a Joint ICES-PICES Science Conference has been raised on several occasions. This would be a one-time event that would be held in lieu of the regular annual ICES and PICES science conferences. It would be hosted by one of the three countries that are members of both ICES and PICES.

**Rationale for a joint meeting:** We believe a joint meeting in 2023 would offer an important opportunity to bring together scientists from across the North Pacific and North Atlantic.

- We are at a pivotal point in our sciences as manifested by unprecedented observed rates of change in the oceans, rapid (at times transboundary) movements of species, changes in community structures and associated food-webs, opening of the Arctic, among others, and their impacts on the human communities that depend on our sustainable resources. A joint meeting would allow our scientific communities to synthesize, report on, and discuss developments in marine science and to plan future research activities. A joint meeting also would allow our scientific communities to share and improve upon science-based approaches for marine management and conservation goals.
- Also, with start of the UN Decade of Ocean Science for Sustainable Development in 2021, this conference could be designated as a formal “Decade Event” which emphasizes the science that has and will be conducted during the decade and the application of this science to sustainable development. Consistent with the goals of the decade and ICES/PICES shared priorities, the joint conference can play an important role in furthering development of early career professionals, representation from indigenous communities and developing nations, and recognizing the importance of gender equality.



**The U.S. as a potential host:** PICES annual meetings are hosted on a rotational basis while hosting ICES Annual Science Conferences follows an informal arrangement under which member countries volunteer when they are able to do so. The U.S. is scheduled to host PICES in 2023 (delayed by one year due to the pandemic) and, even though we hosted an ICES ASC quite recently (in 2017) we are pleased to offer to host this joint conference in 2023. This offer is subject to the availability of appropriated funds to support the conference, and before we can make the necessary financial commitments we will need to discuss and resolve the issues raised below.

**Considerations and request:** We recognize a joint conference might require changes in the structural and financial arrangements for the conference and that a number of complex issues must be resolved rather quickly if we are to complete the planning for a 2023 conference in a timely manner. While we understand that an agreement to move forward must be endorsed by the PICES Governing Council and the ICES Council of Delegates at their annual meetings later this year (2020), *we would like to propose to convene a high-level working group as soon as you consider appropriate* to address some of the substantive issues. We would like to suggest that this working group include the US ICES and PICES Delegates, the ICES General Secretary, the PICES Executive Secretary, and key individuals from NOAA and the Department of State.

Historically, science symposia of this type have required all participants to attend in-person, at the designated venue. We realize this is no longer the case. Our respective organizations have learned a great deal about facilitating remote participation in meetings and conferences, largely as a result of the restrictions presented by the pandemic. While remote participation presents its own unique challenges, it enables broader participation, reduces travel costs and recognizes the ethical issues associated with fossil fuel emissions. As such, we wish to work with you to design and implement a joint ICES/PICES conference for 2023 that prioritizes, encourages, and facilitates remote participation.

We look forward to your thoughts and advice, and hopefully, to working with you on this exciting and challenging opportunity.





**ICES**  
**CIEM**

International Council for  
the Exploration of the Sea  
Conseil International pour  
l'Exploration de la Mer

Council Meeting

October 2020

CM 2020 Del-Doc 7.4

Agenda item 7

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## ICES Annual Science Conference 2021

In April 2020, ICES leadership decided to postpone the 2020 ASC to 2021. It was further decided, and communicated by the SCICOM chair that there was a need to preserve to the extent possible, the conference plans, as well as the hard work put into developing and selecting the theme sessions, including selection of abstracts by the convenors. Notwithstanding the need to consider updates and to fill any other gaps in the plan that result from postponement.

Leading up to the 2020 Council meeting Council delegates were asked to provide their perspective on the format and structure of future ASCs taking into account in-person, online, and hybrid possibilities and relevant experience.

Out of nine answers, five highlighted the importance of community networking opportunities provided by a physical meeting. Three delegates encouraged the possibility of having enhanced online participation for at least a limited part of the 2021 ASC, with two delegates further encouraging Council to consider a new model for future ASCs. And one delegate finding it difficult with a physical ASC in 2021, with the current trajectory of the pandemic.

Given that it is not clear what the human and financial resource needs are, and what the technical implications are, as well as quality issues, Council is invited to:

- Mandate the Secretariat to investigate the resource implications of a hybrid conference, and based on this to come back with suggestions for how to arrange the 2021 ASC (enhanced on-line participation or hybrid conference), and the associated resource needs
- Mandate Bureau to take a decision at its meeting 17 November, 2020.

SCICOM needs to consider the implications of a changed format and will work together with the Secretariat to make certain that the format of the 2021 ASC, based on the agreed structures, will be adapted in a way that ensures a comprehensive balance to meet the ICES science priorities, while understanding that there are limitations to both hybrid and entirely remote meetings.

## Increasing opportunities to engage with ICES expert groups through online open sessions

### Request to Council:

In accordance with the Rules of Procedure and Resolution ICES CM 2008 Del-05 to take note of the suggested pilot process (three years) for a sub-set of ICES Expert Groups (not including ACOM EWGs<sup>1</sup>) to:

- allow expert groups to host open sessions during online meetings, where the focus is broader than their specific ToRs (i.e. the open session will be related to, but not specifically address the ToRs), and
- where the sessions are defined as open because participation it is not limited to expert group members,.

### Background:

The large number of online expert group meetings during the COVID-19 pandemic have provided greater opportunities for engagement in ICES, where participation is less likely to be limited by travel budgets and home and personal circumstances. With many meetings now online, there have been some challenges to ensure participation is limited to working group members or workshop participants, in part because e-invitations are easily forwarded beyond the membership list. To address this we have posted a reminder on process on the WGCHAIRS forum and added this to e-invitations. The reminder to chairs states that: *"The shift to a predominance of online meetings has led to some questions about participation and how this should be managed. One benefit of online expert group meetings is that they are providing opportunities for greater participation in ICES activities (e.g. because there are no travel and related costs or demands to be away from home for several days), but only the expert group chair(s) and ICES secretariat should send out invitations to expert group meetings. We request that expert group members do not to forward meeting invitations more widely, and this will now be emphasised on the invitations sent by ICES secretariat. In case of suggestions by members for new chair-invited members (working groups) or participants (workshops) in online meetings, you should ask that these suggestions are sent to you as expert group chairs, along with contact details. You, as expert group chairs, should then address arrangements for membership (working groups) or participation (workshops) following the processes described in the [Guidelines for ICES groups](#)."*

The high demand to join online meetings is also an opportunity for ICES. A few groups have already asked for, or offered, webinars and open sessions. To date we have addressed these activities by referring to the reminder above, or components of it. But abiding by this process makes it more challenging for potential

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<sup>1</sup> Not former ACOM expert groups listed in Annex 10 of the [Guidelines for Expert Groups](#)

participants to join online activity and may remove otherwise unseen opportunities that would result when meeting information is shared organically.

The benefits of simplifying participation in some aspects of online expert group activity are also relevant to an ongoing joint ACOM-Human Dimension Strategic Initiative work stream on stakeholder engagement in ICES. Two tasks in the advisory plan require a more formalised approach to engagement with stakeholders to maintain legitimacy of ICES advice.

### **Proposal:**

To provide expert groups and thus ICES with the greatest opportunities to encourage participation, we propose that working groups and workshops should be allowed to include some defined forms of online activity during their meetings and for which participation would not be restricted to chair-invited members (working groups) or participants (workshops) as currently defined. We propose that this option would be available to all expert groups except those with [ACOM affiliation prior to 1 January 2019](#). Activities to be included and conditions that might apply may be described as follows.

*“When expert groups meet online the meetings can provide new opportunities for participation in ICES activities and allow groups to promote their work more widely. All expert groups that did not have ACOM affiliation prior to 1 January 2019 are permitted to include sessions in their online meetings that are open to participants who are not formally recognised as members (working groups) or participants (workshops). Online open sessions may be used to promote outputs and activities of the expert group, solicit information, stimulate and engage in scientific debate and develop collaborations.*

*The following requirements apply to open sessions:*

- *Invitations should be circulated separately from those used for the meetings of formal members (working groups) or participants (workshops)*
- *Expert group chairs are responsible for circulating “open session” invitations and arrangements for promotion and running of the session*
- *Open sessions are not used to fully address expert group terms of reference nor to make decisions on behalf of the expert group”*
- *Chairs are to remind participants of the ICES [meeting etiquette](#).*
- *While the code of conduct applies, it is not necessary to enforce the conflict of interest discussion for these open sessions.*

Relevant rules:

ICES Convention Rule 6.3 Each Contracting Party may appoint such experts and advisers as it may determine to assist in the work of the Council.

Rules of Procedure:

Rule 28.

The Science Committee, on behalf of the Council, shall institute structures and processes to ensure that inter alia science programmes, regional considerations, science disciplines, and publications are appropriately considered.

Rule 29.

The composition of structures established according to Rule 28 shall be determined by the Science Committee.

Resolution: Proposal for the Reform of the ICES Science Programme, ICES CM 2008 Del-05, paragraphs

5. The new Science Committee will be free to institute structures and processes to ensure that *inter alia* science programmes, regional considerations, science disciplines, and publications are appropriately considered. The central framework for the science process is a balance of subcommittees, programmes and expert groups.
17. The Council recognizes that the new science system will require adjustments, especially during its first years of operation, in order to function as intended. The new SciCom has the authority to introduce such adjustments.

Guidelines for ICES groups (Section 3.5.2) [https://www.ices.dk/about-ICES/Documents/Guidelines for ICES Groups.pdf](https://www.ices.dk/about-ICES/Documents/Guidelines%20for%20ICES%20Groups.pdf)

Observer policy -  
[http://www.ices.dk/community/Documents/Observer/CM\\_2013\\_Del-11%20Observer\\_rules.pdf](http://www.ices.dk/community/Documents/Observer/CM_2013_Del-11%20Observer_rules.pdf)

ICES Code of Conduct  
[https://www.ices.dk/about-ICES/Documents/CM-2018\\_Del-05\\_CoC.pdf](https://www.ices.dk/about-ICES/Documents/CM-2018_Del-05_CoC.pdf)

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## Data and Information Services<sup>1</sup>

### 1 Summary

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- We are awaiting the first evaluation response of the Data Centre Accreditation, which was submitted to Core Trust Seal in July 2020
- Two governance groups have come into operation in 2020, related to the Transparent Assessment Framework (TAF) and the acoustic data portal
- The agreement to establish a new Steering Group under SCICOM - the Data Science and Technology Steering Group (DSTSG) is an important recognition of the value and contribution of data science and services within ICES
- The Regional Database and Estimation System (RDBES) has modelled the complexity (and divergence) of commercial catch sampling across the ICES countries, an important first step in both defining the overall data model, but also in working towards greater convergence
- The ICES Data Centre continues to increase the breadth of data portals, but also the depth of content through a number of externally funded projects and contracts, notably for underwater noise and core competences in marine contaminants, oceanographic and biodiversity data will be enhanced through these to the benefit of the ICES community

To follow-up on the Council equity decisions that were agreed last year, items related to the data area are flagged in specific sections, and the overview presented in Annex 1: Status of relevant deliverables from Council Equity Investments (Table 2, CM\_2019\_Del-3.3\_Equity).

### 2 Data Centre Accreditation

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The Data Centre submitted the final accreditation application in June 2020, after a review by the DIG chair (Jens Rasmussen, UK) and informing the Data and Information Group at their annual meeting in May. The Core Trust Seal (CTS) organization invoiced the administrative fee to ICES in July 2020, which then triggers the formal timeline for CTS to select reviewers. CTS have up to 2 months to provide feedback and comments to the application, and ICES can make up to 5 iterations of the application based on this feedback. Minor clarifications and

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<sup>1</sup> ICES Data Centre and Data and Information Group (DIG)

updated links were made to the application in August, which entails we would anticipate feedback from CTS reviewers by mid October 2020.

The application responds to the 16 requirements of the CoreTrustSeal accreditation certification, each requirement is scored on a scale of 0-4 (from not applicable to fully implemented). In the application, ICES have self-assessed as follows:

- 13 requirements are fully implemented in the (ICES) repository
- 3 requirements are in the implementation phase

Of the three requirements in the implementation phase, these relate to the planned changes to the data policy/data licencing and the description of the dataflows through schematics.

## 2.1 Dataflow Schematics

We have continued the refinement of the ICES managed data flows schematics, which will form a part of the accreditation. This complements the wider effort on addressing quality control of data, and quality assurance of advice – where process flows of the overall advice are seen as key to understanding where control checks are needed, and where they will have the greatest impact.

In this context, the publication of the series of data flow schematics has been raised with ACOM, and ACOM have approved the process of development and review cycles for these schematics, as they are closely related with the production of advice. A new publication type series has been created specifically for these schematics in the ICES publications library. Each data flow schematic will contain the following:

- Standard meta-data regarding the data flow (purpose, data portal, contacts, consumers of data, relations to other data flows)
- An annotated schematic using standard symbology and covering all process steps of a data flow into and out of ICES systems
- Legend of Symbology uses
- Version history

The first schematic was published in June as [Data Flow Schematic for Vessel Monitoring System \(VMS\) and Catch Data in the North East Atlantic Fisheries Commission \(NEAFC\) regulatory area.](#)

The aim is to have 9 (of the 30) dataflows published by the end of 2020. A further 19 published in 2021. Of the two remaining – the marine aggregates dataflow is not yet fully operational, and therefore it is uncertain when it will be possible to describe and publish the dataflow. The TAF workflow will be the most complex to describe, both for data input and advice outputs, and will rely on many of the other dataflows – therefore this dataflow will only be described once the other dataflows are published. Each of the 30 active data flows will be reviewed on a 3 year cycle, or sooner than this should there be noted a significant change in the dataflow.



### 3 Data Governance

Of the established governance groups, with the exception of SC-RDB which meets in December, all have held at least one meeting in 2020. They are in different stages of maturity, however most of them have developed similar tools/documents to help guide and manage their governance roles. For example, following the example of WGSMA, other groups have now adopted the Github approach for managing tasks, prioritization and outputs from the group.

The latest addition to the governance groups, is the Acoustic Trawl Data Portal Governance ([WGACOUSTICGOV](#)) chaired by Ciaran O'Donnell (Ireland) – they will oversee the continued and future development of the [acoustic portal](#) in order to meet the requirements of end users and the wider community. This will include deliverables 1 and 2 related to improved QA and QC of fisheries independent data outlined in the request for equity (Table 2, [CM 2019 Del-3.3 Equity](#)). Both of these deliverables have progressed in 2020 despite the COVID-19 situation. Delivery 2 is due by the end of 2020, and the current status is that a proposal is now being discussed between the acoustic and bottom trawl survey governance groups.

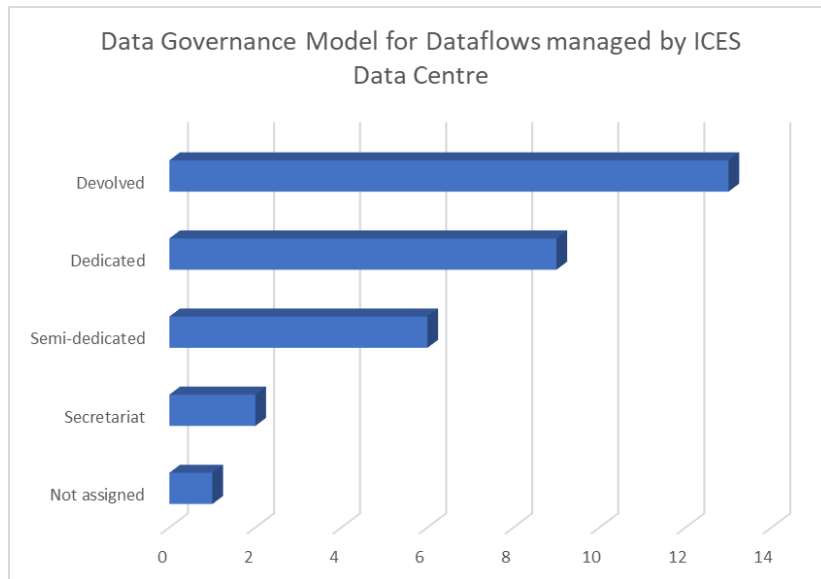
At the DIG main annual meeting (May 25-29). DIG evaluated the Marine Environment Data flow (DOME), highlighting any shortcomings in the way the data flow is managed, and providing a report of potential improvements for the governance groups to consider.

Data governance in the ICES context has developed quite rapidly in the last years, and there is some need to clarify the governance landscape related to ICES managed dataflows. Of the 31 dataflows defined within the accreditation application, these can be classified accordingly:

Governance	Description
<b>Dedicated</b>	A specific governance group with ToR's that address governance of a dataflow/process
<b>Semi-dedicated</b>	An expert group, steering group or Committee with ToR(s) that address governance of a dataflow/process alongside other ToRs
<b>Devolved</b>	A collection of expert groups, steering groups or Committee and/or client organisation committees/expert groups that address governance of a dataflow/process
<b>Not assigned</b>	The default in cases where there is no assignment, is DIG governs the dataflow/process
<b>Secretariat</b>	Managed within the Secretariat

There are important distinctions in these classifications related to the level of engagement from the ICES community, and the level of control that the ICES community has. Overall, we should be aiming for governance that is embedded by

design in the relevant ICES and client organization groups, and where engagement is high and control is within the remit of the governance group(s). The current picture of the 31 dataflows according to this classification is shown below:



A full list of the dataflows is provided in Annex 2: Active managed data flows; dataflow governance.

### 3.1 DSTSG

The establishment of a new Steering Group under SCICOM - the Data Science and Technology Steering Group (DSTSG) which will be chaired by Jens Rasmussen (UK) in 2021, has a bearing on the future steering of data governance in ICES. All of the dedicated governance groups will reside under this steering group, given them a clear identity and fora for discussing governance issues. It is expected that the connection of these groups to DIG will continue in some form, which is to be discussed further by the chairs.

## 4 Data Policy and Data Licencing

DIG, together with the Data Centre and the relevant data governance groups started a review of the current data policy and data licence structure related to ICES managed data in 2019. This work has continued in 2020, with a consensus that the [current data policy](#) should be retained and focussed on the overall processes for receiving, cataloguing and holding data submitted to ICES. While the data usage and citation of data are to be housed in a separate data licence. For open access data, it was agreed that ICES should adopt an existing licence model, rather than create a bespoke version. Likewise, the existing restricted access data licences i.e. for VMS/Logbook would be revised to align to the same structure as to the licence model chosen for open data.

Inter-sessional work is now commencing to prepare a package of a revised data policy, and data licences, which will be brought to ACOM and SCICOM in Spring of 2021, and if agreed for adoption by Council in October 2021.

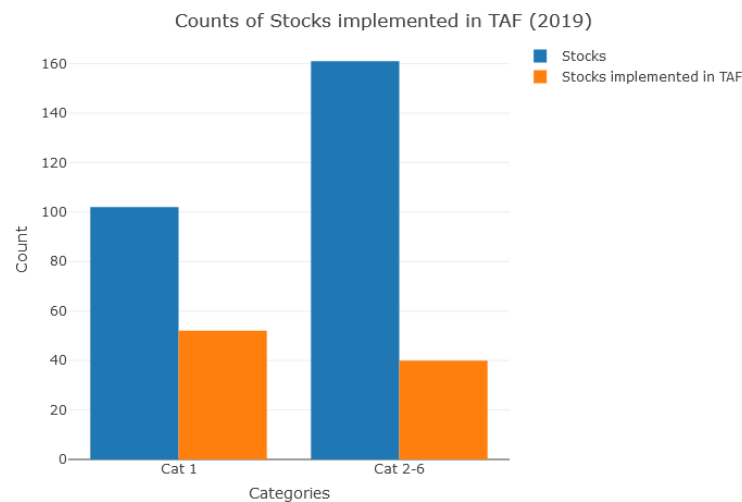
## 5 Transparent Assessment Framework ([TAF](#))

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Currently, there are 50 fully entered stocks and 150 partially entered, 60 of these are draft 2020 assessments. All data input and output is fully traceable and versioned. The focus in 2019-2020 has been on ensuring adoption and building competence in the ICES assessment community and the initiation of a governance group to provide community oversight and ownership. Seven training workshops have been held, 3 in ICES with online attendees via WebEx, and four regional training workshops covering the Celtic Sea, North Sea, Bay of Biscay and Iberian Coast, and the Baltic regions. Further workshops are planned for the Norwegian Sea, Faroese and Icelandic Waters regions, and a workshop was held for Southern North Sea in 2020.

The Working Group on Transparent Assessment Framework Governance (WGTAFGOV), chaired by Nils Olav Handegard (Norway) which will oversee the governance of TAF as it develops has had 2 meetings in 2020 primarily focussed on establishing the ‘manifesto’ which outlines the main vision and goals for TAF, what resources it requires, and the way in which it will conduct prioritisation of tasks. This includes deliverables 6 and 7 according to the Council equity investment agreed in 2019 (Table 2, [CM 2019 Del-3.3 Equity](#)). An important discussion has been on how TAF will deal with the portfolio of assessment and product types, this is critical for the future success of TAF (and ICES in general) in being able to deal with wider ecosystem assessments other than single species, as well as products that are not an assessment, but contribute to an assessment i.e. a specific indicator.

ACOM also discussed TAF in its September meeting, under a discussion/breakout entitled “Moving to widespread use of TAF – benefits, challenges and next steps”. The overall message was that ACOM has outlined a process to be enacted before ACOM meets in Spring to recruit experts into the TAF system, encourage the use of TAF, and to become more familiar with the system and its benefits – both the assuring quality aspect, but also in terms of the potential for greater automation of processes that assessment experts currently perform in a manual and error prone way.



## 6 Regional Database and Estimation System (RDBES)

### 6.1 Progress

The RDBES core group have had 16 web meetings in 2019, and so far 31 in 2020. In 2020 a new version of the RDBES was made available for the WKRDB-POP. The first [data call](#) for data to the RDBES was published in May. WKRDDDB-EST (focused on estimation procedures) was held in September and a WKRDB-RAISE&TAF are planned in November or January.

### 6.2 Timeline for development, acceptance and implementation

The RDBES will still be in development during 2020 and 2021 and it is scheduled to move into production in 2022. Currently it is planned to have a data call in 2022 for 2021 data - this will be used to provide estimates for “all stocks”. The feasibility of this “big-bang” approach must be carefully reviewed during 2020 and 2021. Its success will rely on the effort and contributions from a large number of people in the wider ICES/EU data collection community, and not just the relatively small groups who attend the SCRDB or Core Group meetings. It may be more realistic and involve lower risk to have a phased approach where the RDBES is used to produce 2021 estimates for a selection of stocks or particular assessment working groups in 2022. This should be decided upon at the SCRDB meeting in 2020 in light of the progress made during the year.

### 6.3 Achievements to date

- Governance provided across International ICES domain/EU via SCRDB has proved a powerful role model
- A skeleton operational system for receiving and handling detailed sample data and aggregated catch and effort data
- Support from 3 special requests from EU for RDBES to date;

- Cooperation and engagement from countries – where the WK's have proved an effective means to actualise this
- Embodiment of the regional approach to survey design/sampling
- Transparency (process, data preparation) – common understanding developed in how to integrate into TAF workflow; data will be documented at the national level and all the way to the advice in a transparent way
- Initiation of a dialogue/engagement with groups that are just starting the journey towards transparent data and processing, but would like to follow best practices (Recreational, Diadromous, Bycatch, Long Distance Fisheries - users of RDB for +2 years, Large Pelagic)
- Tools to support ICES advisory work - Catch and Effort Overviews developed for RDB and will form a key dashboard within RDBES, Sampling Overviews are also in the process of being developed
- RDBES papers presented at International Conference on Marine Data and Information Systems (IMDIS) conference 2018 and accepted for 2021

## 6.4 Challenges still faced

- Aspirational timeframe – this is reviewed regularly by the SCRDB and will be revised if required
- Roll-out – operationalisation will be a massive task for all countries, especially as their levels of readiness are very different;
- Writing/designing new estimation routines for all statistical sound sampling schemes; and documenting current and historic estimation
- Available expertise within the ICES community

## 7 Infrastructural changes

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The plans to redevelop the data tracking system (Accessions) and roll-out the new ICES data portal are still underway, however they have been affected by COVID-19 as resources have been prioritized to other tasks.

To recap, these developments will redesign the way that ICES registers, stores and tracks data through the ICES data management systems – the '**accessions system**' as it is now called.

Since 2019, the Data Centre has been working on plans to redesign its main generic data discovery portal (currently <http://ecosystemdata.ices.dk/>). The main aims of this update are to include more than input data, also indicators/data products from existing ICES systems (SAG, DATRAS Indices, bycatch risk, etc) and having a user area to access restricted layers (eg. specific to a working group).

Despite these delays the Data Centre has, as planned, upgraded and improved the main meta data discovery catalogue and services in April 2020<sup>2</sup>.

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<sup>2</sup> <http://gis.ices.dk/geonetwork/srv/eng/catalog.search#/home>

## 8 Projects, Contracts and sub-contracts of note

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### 8.1 Continuous Underwater Noise

The ICES Data Centre has launched a new data portal under a contract from HELCOM. This new portal receives [continuous noise](#) data from 20 monitoring locations in the Baltic sea. The data format was developed in conjunction with HELCOM experts, but also the JOMOPANS project in the North Sea. This was to align the regions, and open for the possibility that OSPAR contracting parties could make use of the database once the JOMOPANS project concludes. A joint document from JOMOPANS/ICES data centre was submitted to OSPAR EIHA on ambient noise data management. This was received positively, and further discussions will elaborate on how ICES would cost services to contracting parties from OSPAR making use of this database.

### 8.2 [Mission Atlantic](#): Vulnerable Marine Ecosystem (VME) case study

This large EU Horizon 2020 project has many routes or links to the ICES community. A small task within the work package on data continues the successful collaboration between the Working group on Deepwater Ecology (WGDEC) and the ICES Data Centre. In this case study, the aim is to extend the VME dataset, which already extends from Canada to the Norwegian Coast, into the South Atlantic using methods and knowledge gained through experience in the development of a harmonized [North Atlantic data portal](#).

### 8.3 Baltic Dataflows (HELCOM)

The ICES Data centre is one of the main partner beneficiaries to a project, led by HELCOM, that is starting in October 2020 related to enhancing the infrastructure of managing and sharing data within the Baltic regional sea. ICES is involved/leading in several work packages, and highlights include:

- Upgrading the ICES Oceanographic data portal (to conform to internationally recognised vocabularies and state of the art standards, with interoperability and data exchange with other national and international systems in mind)
- Working with SMHI and SYKE, develop an API-based data harvesting system for 3 dataflows: Biological community, Contaminants and Eutrophication (oceanographic)
- Making regional sea assessment data products FAIR; this will be valuable learning for the challenge laid down in the ICES Advisory plan to do the same for ICES stock assessments.
- Further development of data processing and software used in hazardous substances assessment – see [OSPAR example](#)

9 Annex 1: Status of relevant deliverables from Council Equity Investments (Table 2, [CM\\_2019\\_Del-3.3\\_Equity](#))

Del	Description	2020	2021	2022	2023	2024	Status
<b>QA and QC of Fisheries independent and dependent data</b>							
1	Assist acoustic survey groups in using the ICES TAF for their abundance indices estimates that are used in stock assessments						WGACOUSTICGOV established; engaging with survey groups and WGTAFGOV; HERAS survey will be used as test case in late 2020
2	Align the DATRAS (biotic) and the Acoustic (biotic) format						WGDG (Datras governance) have now completed a unified format for DATRAS surveys; this is the first step in enabling the alignment of the DATRAS and Acoustic biotic format. The Secretariat is now drafting a proposal for WGDG and WGACOUSTICGOV
3	Redesign and new functionality on DATRAS web portal, including an updated data screening facility						Not planned to start until 2021
4	Fully operational ICES Regional Database (RDBES) with a regional estimation system such that statistical estimates for stock assessment can be produced from detailed sample data in a transparent manner						Commencing through SC-RDBES, and RDBES core group;
5	Incorporate detailed data on Bycatch and PETS AND/OR Recreational data (to be determined by SC-RDB)						Not planned to start until 2022
<b>QA and QC of Assessment</b>							

6	200 unique stocks available in TAF					Progressing through WGTAFGOV, and enhanced support from ACOM
7	Managed through TAF, functioning system and QA process to enable transparent documented reviews of data and code behind stock assessment results					Ultimately, this will be housed in TAF, however this challenge is already being investigated by DIG on request from ACOM
<b>Dissemination of Advice</b>						
8	Publish a web-based advice that includes several levels/layers (incl. popular advice, forecast options, full advice); and enables presentation of advice in an effective and consistent format					Recruitment will start in late 2020 for a position to support the follow-up on the original proof of concept "Visualization of Science based Advice" (VISA)



## 10 Annex 2: Active managed data flows; dataflow governance

Active data flows (April 2020)		
Name	Title	Purpose
Acoustic	Acoustic	To store and make acoustic trawl data available to the stock assessment and ICES community
Biodiversity	Biodiversity birds	Birds data (breeding and non-breeding) for regional biodiversity assessments
ByCatch	ByCatch	To underpin the bycatch advice, overseen by WGBYC
No data portal	Catch statistics	To unify and store annual nominal catches in the Northeast Atlantic region coming from different sources
UnderwaterNoise	Continuous underwater noise	To implement and host the HELCOM continuous underwater noise database and to set up a soundscape planning tool for HELCOM.
DATRAS	DATRAS	Database of trawl surveys and related data products
DOME	DOME Biological Community	Temporal and spatial trend data for monitoring the environmental quality
DOME	DOME contaminants, biological effects and fish disease	Temporal and spatial trend data for monitoring the environmental quality by regional sea conventions and ICES groups
EggsAndLarvae	EggsAndLarvae	Store the eggsnadlarvae data for assessment purposes
Oceanography	HELCOM Eutrophication Assessment Tool (HEAT)	To facilitate the HELCOM Eutrophication Assessments
Oceanography	ICES Report on Ocean Climate (IROC)	To support the generation of the annual ICES Report on Ocean Climate (IROC) for the Working Group on Oceanic Hydrography
Vocab	ICES Vocabulary	Store reference codes controlled by ICES and external for use in ICES data collections

Active data flows (April 2020)		
Name	Title	Purpose
UnderwaterNoise	Impulsive Underwater Noise	This registry is specifically purposed with supporting OSPAR and HELCOM in providing information that will feed their regional assessments, and in reporting by its contracting parties to MSFD descriptor 11.1.1 (Low and mid frequency impulsive noise)
InterCatch	InterCatch	Data is the basis for the ICES stock advice
_No data portal	Litter data	To provide litter data for the regional environmental assessments from DATRAS and DOME
Marine Aggregates	Marine aggregates	To provide a summary of data on marine sediment extraction, marine resource and habitat mapping.
Oceanography	Oceanography	Oceanography focuses on understanding the interplay between physical, chemical and biological conditions in the ocean and how these factors impact the living conditions for marine organisms
DOME	Phytoplankton Biovolume Report	To support HELCOM PEG with publishing updates for Phytoplankton biomass calculation data and to provide basis information for DOME PP biomass calculations
Vocab	Platform requests	Assigning codes to the vessels used to collect data, to include them in the vocabulary used in data submissions.
Rec12	Preliminary catches	Provide preliminary catch figures of the last year for stock assessments
RDB	RDB, Regional DataBase	The data basis for the RCG groups, Regional Coordinating Groups Baltic, NA and NS & EA
RDBES	RDBES, Regional DataBase and Estimation System	Data basis for the RCGs (Regional Coordination Groups Baltic, NA and NS & EA, LDF and ICES Expert Groups
SmartDots	SmartDots	Calibration of age estimates for support to stock assessments
Vocab	Station Requests	To provide common platform for managing national stations for data reporting and assessments
SAG	Stock Assessment Graphs	Produce the stock assessment graphs, summary table and stock status table for the stock advice

Active data flows (April 2020)		
Name	Title	Purpose
SID	Stock Information Database	A central repository for all stock data and attributes
TAF	Transparent Assessment Framework (TAF)	To make the data, methods and results from ICES assessments easy to find, explore and re-run
_No data portal	Vessel Monitoring System (VMS) - NEAFC data call	Support assessment and ICES advice products (e.g VME advice)
_No data portal	Vessel Monitoring System (VMS) data	Support Assessment and ICES products
VME	Vulnerable Marine Ecosystems	A central portal for data on the distribution and abundance of Vulnerable Marine Ecosystems used for the advice on NEAFC closure areas

Dataflow	Governance type
Vessel Monitoring System (VMS) data	Dedicated
Vessel Monitoring System (VMS) - NEAFC data call	Dedicated
Acoustic	Dedicated
DATRAS	Dedicated

<b>Dataflow</b>	<b>Governance type</b>
ICES Report on Ocean Climate (IROC)	Dedicated
RDB, Regional DataBase	Dedicated
RDBES, Regional DataBase and Estimation System	Dedicated
SmartDots	Dedicated
Transparent Assessment Framework (TAF)	Dedicated
Litter data	Devolved
Catch statistics	Devolved
Biodiversity birds	Devolved
Phytoplankton Biovolume Report	Devolved
DOMe Biological Community	Devolved
DOMe contaminants, biological effects and fish disease	Devolved
HELCOM Eutrophication Assessment Tool (HEAT)	Devolved
OSPAR Common Procedure Eutrophication Assessment Tool (COMPEAT)	Devolved

<b>Dataflow</b>	<b>Governance type</b>
Continuous underwater noise	Devolved
Impulsive Underwater Noise	Devolved
Platform requests	Devolved
Station Requests	Devolved
Oceanography	Not assigned
Preliminary catches	Secretariat
Stock Information Database	Secretariat
ICES Vocabulary	Devolved
ByCatch	Semi-dedicated
EggsAndLarvae	Semi-dedicated
InterCatch	Semi-dedicated
Marine aggregates	Semi-dedicated
Stock Assessment Graphs	Semi-dedicated

Dataflow	Governance type
Vulnerable Marine Ecosystems	Semi-dedicated



**ICES**  
**CIEM**

International Council for  
the Exploration of the Sea  
Conseil International pour  
l'Exploration de la Mer

Council Meeting  
October 2020  
CM 2020 Del-Doc 10.1  
Agenda item 10

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## External projects

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## 1 Projects and further information on the revised mandate

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### Update on ICES project participation

There are 9 ongoing projects and 6 subcontracts, mostly by the ICES Data Centre:

- Ensuring hosting of the data beyond the project life cycle;
- Development of the acoustic data portal;
- Development of the OSPAR noise register;
- Consolidating ICES activities in the EMOD-NET;
- Developing standards for data and technical development of the MSFD indicators;
- Making the data available in the ICES system in line with the work of HELCOM;
- Further development of existing data sharing platforms.

### Projects and contracts in pipeline

- H2020 BG-10-2020 Fisheries in the full ecosystem context: 4 competing proposals (Advisory Department) – EBFM;
- LC-BG07-2019 The Future of Seas and Oceans Flagship Initiative (Advisory Board);
- Department for Environment Food and Rural Affairs (UK) – developing a Joint Cetacean Database Programme with the ICES D.C. -on behalf of the UK / to ensure the data base long-term functionality – aligned with the ICES Working Group on Marine Mammal Ecology.

### Mission Atlantic

BG-08-2018-2019 All Atlantic Ocean Research Alliance Flagship Project focused on building capacity for IEA

ICES contribution to improving professional skills and competences across the Atlantic in support of IEA approaches to ocean resource management.

WGEAWESS, WGINOR, WGIAB, WGNARS, IEASG Chair.

### Revised mandate

Council 2015 decision allowing the secretariat to led EU ‘Coordination and Support Action’ projects to build on the strengths of the organization.

There are changes expected in the next EU Framework Program, and with future strategic instruments ICES needed greater flexibility to operate on strategic projects. Given the potential of research coordination and research support mechanisms in Horizon Europe, it is important that ICES has the potential to play a prominent role.

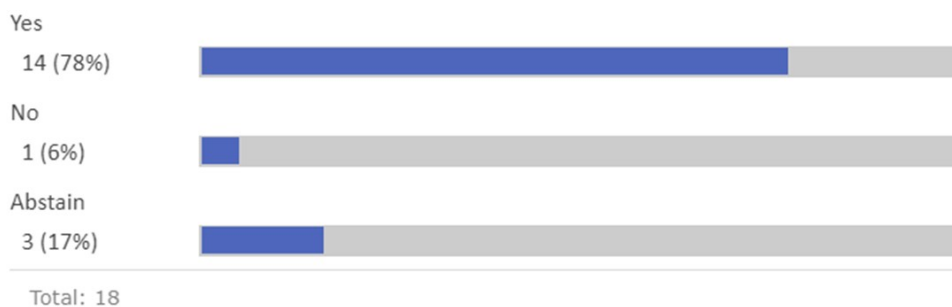


**Council 2019 discussion and decision on:**

Approval to seek, participate and/or lead projects where:

- Research is not the main goal of the project;
- The project is oriented towards science coordination, programming, supporting use of the existing data and knowledge, dissemination of synthesised results, training;
- ICES is in an outstanding position to fulfil the requested tasks;
- The project scope is in line with the ICES Strategic and Science Plans.

Outcome of the e-vote:



This new mandate will provide greater flexibility and responsiveness. Horizon Europe will start on 1 January 2021 and end on 31 December 2027.

## 2 Ongoing projects

START DATE	CALL TITLE	TITLE	LEAD	ICES TASKS	BENEFITS
2018	SFS-21-2016/2017	PANDORA PAradigm for New Dynamic Ocean Resource Assessments and exploitation	Lotte Worsøe Clausen	Training, integration of new knowledge into operational advice, incorporation new data collection methods. Enabling conversations between research scientists and ICES advisory working groups.	Co-creation of the new knowledge to smooth utilisation of science into advice
2018 - Q4	H2020 LC-BG-03-2018	MEESO Ecologically and economically sustainable mesopelagic fisheries	Neil Holdsworth	ICES will be the work package lead for the Data management for all data generated within the project (biological, acoustic, biochemical, biotic) which will follow many standards/protocols developed within the ICES community and ultimately the data will be available in ICES infrastructure.	Embedding ICES standards and protocols in the data collection processes of the project, ensuring hosting of the data beyond the project life cycle. Further development of the acoustic data portal, as well as boosting the eggs and larvae standards and data
2019 - Q1	MSFD - second cycle: implementation of the new GES decision and programmes of measures - DG ENV/MSFD 2018 call	QUIETMED2 Joint programme for GES assessment on D11-noise in the Mediterranean Marine Region	Neil Holdsworth	Knowledge share about the process of development of the OSPAR noise register, the implementation of the tool. Identification of barriers and difficulties of the contributors to the register for submitting data, reporting, etc. Contributions to a preparatory study with requirements specification of a tool to implement an impulsive noise impact indicator. Knowledge share about technical issues for the design, development and implementation of a tool to implement an impulsive noise impact indicator Review and assessment of the demo tool. Attendance to the kick-off and final meeting in Brussels and up to 4 workshops.	Continue the cooperation on standards, exchange of data and knowledge between the NE Atlantic, Baltic and Mediterranean sea regions. Ensure the noise register at ICES remains at the front of developments in including impact indicators into the framework. Ensures that there is no disconnect between contracting parties to ICES feeding the ICES hosted noise register, and the Mediterranean noise register (France, Spain). And prevents a lost opportunity to align/connect the two regional platforms.
2019 - Q3	EASME/2019/OP/0003	EMODnet Physics 3.2 European Marine Observation and Data Network (EMODnet) - Physics	Neil Holdsworth	ICES Data Centre to provide expertise in the underwater noise data developments (both impulsive and ambient) and act as conduit between RSC's, MSFD TG NOISE and the	Consolidate ICES activities on underwater noise and to avoid missed synergies and ensure ICES is recognized in area

START DATE	CALL TITLE	TITLE	LEAD	ICES TASKS	BENEFITS
				EMODnet project; Also help in providing web services to the EMODnet portal	
	EASME/2019/OP/0006	EMODnet Data Ingestion II EMODnet - Ingestion and safe-keeping of marine data	Neil Holdsworth	ICES serves as a point of contact for biological and environmental data.	Influence and staying in line with current metadata standard developments used for submitting data. Potential source of new data from providers not currently in established data collecting frameworks leading into EMODnet data portals as well as ICES.
2019 - Q4	EASME/2019/OP/0003	EMODnet Chemistry 4 European Marine Observation and Data Network (EMODnet) - Chemistry	Neil Holdsworth	WP5: ICES will continue to be in charge of organising the Board of MSFD experts meetings together with the coordinator OGS (Lead of WP5: MSFD, Regional and European uptake and interaction) WP3: Development/Presentation of updated DIVA maps (D3.6) and draft marine litter maps to MSFD board (D3.10).	ICES is ensuring synergy between existing dataflows and the EMODnet portal to avoid duplication of data (and effort). ICES also acts as the main conduit from the OSPAR and HELCOM data product needs into EMODnet Chemistry.
2019	2-year extension	EMODnet Biology III (extension) European Marine Observation and Data Network (EMODnet) - Biology	Neil Holdsworth	Major provider of biological observations (presence/absence). Collaborating on data products i.e. the ICES OOPS derived via this project. Also contributing to data standards and harmonization.	The project has the potential – as shown with OOPS – to deliver operational data products in addition to what the ICES Data Centre, and ICES community can offer and is prepared to do this in a way that would allow these products to be used in an advice process with assessment of their quality.
2016 - Q4	Call: H2020-INFRAIA-2016-2017 (Integrating and opening research infrastructures of European interest)	SeaDataCloud Further developing the pan-European infrastructure for marine and ocean data management	Neil Holdsworth	WP2 - Project Network Coordination WP5 - Expansion and governance of metadata and data content WP8 - Governance of standards and development of common services WP9 - Development of upstream services WP10 - Development of downstream services WP11 - Development, update, and publication of data products for European sea region	SeaDataCloud is the 3rd iteration of SeaDataNet, the ICES Data Centre is a key player in the steering of the development and ensures the development of standardisation and governance. The infrastructure service that ICES supply as part of the SeaDataCloud backbone is a core (and demanding) part of the ICES data work, and subsidised by this activity.
2020 Q4	2019 CEF Telecom Call – Public Open Data CEF-TC-2019-2	BalDAF Baltic Data Flows	Neil Holdsworth	Further development of existing data sharing platforms- Development and implementation of data harvesting- Further development of data	ICES will use this project to overhaul the oceanographic data flow and infrastructure. This has been a key issue for a number of years and now there is a ready opportunity to bring resources to modernize

START DATE	CALL TITLE	TITLE	LEAD	ICES TASKS	BENEFITS
				processing and software used in hazardous substances assessment	formats, services, linkages to other in-house and international systems. The oceanographic database at ICES is the largest dataset we manage, and used across ICES for various working group and partner products and services. In addition, we will have resources to further develop the HEAT and HAT (Eutrophication and Contaminants assessment tools). Finally, we will build bridges to the Transparent Assessment Framework (TAF), as the whole project will need to deliver open public access data and code, and much of this is already available in the TAF framework. As the data manager for many of the HELCOM flagship assessment and indicators, there is a strategic value in partnering with HELCOM on this project, as it also brings in Two of the main Baltic institutes that have the ability to set the pace of how HELCOM and its contracting parties work.
2020 – Q3	BG-08-2018-2019	MISSION ATLANTIC	Wojciech Wawrzynski	<p>WP2 'Data technology and management for IEA'</p> <p>ICES tasks:</p> <ul style="list-style-type: none"> <li>- Supporting VLIZ (WP Lead) in scanning available Atlantic data sources and drawing Data Management Plans (by month 10)</li> <li>- Demonstration of big data acquisition, storage and analysis: ICES will work on one of 8 Demonstrators (Vulnerable Marine Ecosystem database for All Atlantic) to identify new data technologies in support of IEAs (by month 42).</li> </ul> <p>WP8 'Building Capacity for the IEA'</p> <p>ICES tasks:</p> <ul style="list-style-type: none"> <li>-Workshop on learning objectives (Month 14) with stakeholders to identify training needs of maritime practitioners for an online training programme</li> </ul>	Contribution of the ICES IEASG in developing of All Atlantic IEA, building up IEA knowledge and human capacity within the ICES community.

START DATE	CALL TITLE	TITLE	LEAD	ICES TASKS	BENEFITS
				<p>-Report on learning objectives (by month 18)</p> <p>-Training Programme content approved by WP9, WP10 and the Exec Board (by month 36)</p> <p>-Online IEA training course with teaching material (by month 52): collect training contents from all WP leaders, disseminate via COURSERA platform.</p> <p>WP9 'Societal engagement and communication'</p> <p>ICES tasks:</p> <p>-Support University of Porto (task lead) in drawing dissemination and exploitation plan (by month 6)</p> <p>-Support Intrigo Ltd (task lead) in designing communications toolkit (by month 18)</p> <p>-Support University of Porto (task lead) in organizing two science-policy all Atlantic Fora (by month 12 and 30)</p> <p>-Support the World Maritime University (task lead) in delivering Risk Management Protocol for IEA for policy advice (by month 36) with recommendations for embedding safeguards in the IEA process. This will be based on information collected during annual All Atlantic Research.</p> <p>-Support Intrigo Ltd (task lead) in defining (through the For a, stakeholder workshops and with the Exec Board) Knowledge Transfer Pathways of the project outputs (by month 48), in order to reach key target audience groups</p> <p>-Support DTU (task lead) in documenting added value for environmental managers of IEA tools (report by month 60).</p>	

### 3 Subcontracts

NAME OF PROJECT	ICES SECRETARIAT CONTACT PERSON	MAIN TASK	NO OF PARTNERS PER ICES MEMBER COUNTRY	ICES RELEVANCE
<b>Impulsive Noise Register (2017-2019) (2019-2020)</b>	Neil Holdsworth, Carlos Pinto	Development and Hosting of underwater noise register	OSPAR and HELCOM contracting parties	ICES is developing the standards for data and technical development of the MSFD indicators in close collaboration with OSPAR, HELCOM and EU TG NOISE groups
<b>Nansen Legacy Project (2018-2023)</b>	Lotte Worsøe Clausen, David Miller, Sebastian Valanko	Contribute to user and stakeholder reference group. Increase ICES presence in Arctic networks and see where and how ICES can contribute to future endeavours in the Arctic.	NO: 10	Nansen Legacy will result in a scientific basis for long-term, holistic, and sustainable management of marine ecosystems and human presence in the emerging oceans of the high Arctic.
<b>BALTIC-BIAS (2019+)</b>	Neil Holdsworth	Hosting HELCOM data on continuous noise.	HELCOM contracting parties	Making the data available in the ICES system, and hosting a soundscape tool (risk assessment) to complement the impulsive noise register and cover both aspects of the MSFD Descriptor for underwater energy
<b>Helcom Data</b>	Neil Holdsworth, Malene Eilersen	Make accessible the reported HELCOM monitoring data on oceanographic, biological and contaminants for use in the assessment processes that have been described in the Monitoring Strategy and in the HELCOM Monitoring Manual. Through its fulfilment of HELCOM data tasks since 1998, ICES has been established as HELCOM's data host capable of collecting the HELCOM data over a long period, assuming the continuation of funding for this activity.	HELCOM contracting parties	Making the data available in the ICES system in line with strategic plan for developing services and tools to enable visualisation and easy access to these data for a broad range of users.
<b>HELCOM HEAT – support to assessment development</b>	Neil Holdsworth, Malene Eilersen	Implement development work and changes to current assessment procedure for HELCOM Eutrophication test assessment as guided by HELCOM intersessional network on eutrophication (IN Eutrophication).	HELCOM contracting parties	Making the data available in the ICES system in line with the work of HELCOM IN Eutrophication group.

NAME OF PROJECT	ICES SECRETARIAT CONTACT PERSON	MAIN TASK	NO OF PARTNERS PER ICES MEMBER COUNTRY	ICES RELEVANCE
<b>AMAP assessment portal</b>	Neil Holdsworth, Malene Eilersen	ICES serves as the AMAP (marine) Thematic Data Centre in relation to data collected in the Arctic area for its thematic assessments. Work has been completed under a separate initiative to develop harmonised systems for (statistical) analysis of marine time-series datasets held in ICES and elsewhere. Under this agreement, ICES will perform work to develop an AMAP assessment data portal (based on existing systems developed by ICES for OSPAR).	AMAP and overlapping OSPAR contracting parties	This project ensures that the AMAP assessment tool is available on an international portal.

## 4 Projects and contracts in pipeline

PROPOSED START DATE	CALL TITLE	TITLE	LEAD	ICES TASKS	BENEFITS
2021 - Q2	BG-10-2020	SEAwise Shaping ecosystem based fisheries management	Anne Cooper/Sarah Millar	<ul style="list-style-type: none"> <li>- Organisation of ecosystem benchmark-type workshops to define quality requirements and review methods and applications of ecosystem effects on stock assessment, ecosystem effects of fisheries, mixed fisheries and spatial management</li> <li>- Organisation of training courses where teachers and material is supplied by other SEAwise partners in collaboration with GFCM where possible</li> <li>- Online availability of Regional Advice (EO and FO) supported by fact-sheet style single-stock, mixed fisheries and ecosystem advice sheets.</li> </ul>	<p>The SEAwise framework will address the identification of key interactions, evaluation of management strategies, presentation of trade-offs, as well as national and international courses and demonstrations to facilitate the use of predictions in decision-making. The Advice Plan sets out to do exactly this; present/visualize complex advice to end-users in a comprehensive way whilst not compromising quality.</p> <p>ICES will benefit from the development of visual representation of complex advice displaying trade-offs co-created with stakeholders making ICES advice timely and relevant. The focus on mixed fisheries and ecological impacts in the EBFM will highly improve the ICES mixed fishery and ecosystem advice.</p>
	BG-10-2020	SEASIDE Strategies of Eco-viAbility for fiSherles Development and management in a full Ecosystem context	Sebastian Valanko/Inigo Martinez	ICES will ensure that higher-level EBFM principles and operational products are aligned with ongoing ICES advice, workshops, dissemination and training processes. Details to be further negotiated during Phase 2.	<p>Higher level EBFM principles are what also guide ICES. Both the ICES Fisheries and Ecosystem Overviews are platform by which ICES can show case the operational implementation of such principles. The information within is also based on ICES's core value to provide sound scientific understanding of marine ecosystems and how we as human influence the ecosystem and the service they in turn provide us. As such the projects aim are aligned to what ICES is working towards. The project participants are also key working group members (e.g. WGMIXFISH, WGECON, IEA-groups) that rely exclusively on project funding to support their participation in ICES work. It is envisioned that via the science developed in ICES working groups, that operational advice products (linked to data at the ICES data centre) can be produced. These products can feed directly into the next generation of ecosystem overviews process (following advisory peer-review scrutiny).</p>



PROPOSED START DATE	CALL TITLE	TITLE	LEAD	ICES TASKS	BENEFITS
	BG-10-2020	TEAMFish Transitioning to an Ecosystem-based Approach to Manage Fisheries	Eirini Glyki/ Julie Kellner	ICES will link TEAMFish to the ongoing work of ICES in incorporating ecosystem-based approach to fisheries management through development of assessments and advice. Additionally, ICES will help facilitating the use of the project outcomes in advice, workshops, dissemination and training.	This project will work with modeling techniques that will assist the integrated ecosystem-based approach in fisheries management. It will bring added value to ecosystem advice, and build on training courses.
	BG-10-2020	EMFASIS Ecosystem-based Management of Fisheries: Advancing Stakeholder Involvement and Sustainability	David Miller	To be negotiated during Phase 2.	The proposal focuses on stakeholder participation, but at its core it will work to elevate IEO and MSEs within the stock assessment/advisory environment. If successful, this would provide added value to ICES benchmarking and Advisory Framework that is aligned with the Advice Plan.
	H2020 LC-BG-07-2019	TechnoMare Developing automated sensor systems for monitoring ocean health	Lotte Worsøe Clausen	Advisory Board	
2020 - Q3	Department for Environment Food and Rural Affairs (UK), HBDSEG R&Dt	JCPD Joint Cetacean Database Programme	Neil Holdsworth	1. Initiate plans to develop the JCDP with ICES During Phase I of the project, JNCC discussed with ICES the feasibility of them to build the JCDP platform; they confirmed their interest and explained the process needed for them to take on the work. JNCC will need to make an application to ICES as a “client” or for a “project”; JNCC will further explore the implications of both routes and propose a way forward to Defra, to then implement. Acceptance by ICES will enable the database to be built on behalf of the UK but to ensure its long-term functionality, the suggested route is to bring the care of the database under the remit (Terms of reference) of one of the ICES expert working groups (likely Working Group on Marine Mammal Ecology: WGMME). JNCC already has membership on this group and are	This is a long term plan to have this governed within WGMME

PROPOSED START DATE	CALL TITLE	TITLE	LEAD	ICES TASKS	BENEFITS
				<p>therefore able to take forward this proposal. WGMME chairs have been updated with JCDP developments. However, the governance will need to be discussed with stakeholders, particularly Defra, to ensure we adopt the best approach in the long-term.</p> <p>2. Design and plan development of the cetacean database and portal</p> <p>JNCC will work with ICES and key stakeholders to develop the JCDP database specification. A workshop will be required to discuss the specifications and functionality of the database and portal as well as definition of the open access data products. JNCC will then oversee the build and testing of the platform and database by ICES, in communication with the steering group.</p> <p>3. Create and implement the cetacean database and portal</p> <p>This objective will be implemented by ICES following conclusion of Objectives 1&amp;2, with JNCC and JCDP steering group oversight. It will include the development of:</p> <ul style="list-style-type: none"> <li>- Database front end to host all associated functions</li> <li>- Data ingestion and validation tool</li> <li>- Data visualisation and filtering tools to aid extraction</li> <li>- Data download tool</li> </ul> <p>Pilot cetacean monitoring datasets will be used to test the portal following a pilot data call and request for permissions.</p>	



**ICES**  
**CIEM**

International Council for  
the Exploration of the Sea  
Conseil International pour  
l'Exploration de la Mer

Council Meeting

October 2020

CM 2020 Del-Doc 11.1

Agenda item 11.1

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## UN Decade of Ocean Science for Sustainable Development as well as Arctic, and cooperation

*Council is invited to take note of the below information, and especially:*

- support the work of the Joint ICES Council Strategic Initiative/PICES Study Group to plan participation in the UN Decade of Ocean Science (ICES–PICES Ocean Decade);*
- note the upcoming Arctic regional workshop, under the UN Ocean Decade, taking place in virtual meetings, 23 October, 5 November and if needed 18 November;*
- note the Arctic Science Ministerial (ASM3), taking place, 8–9 May 2021 in Tokyo, Japan, co-hosted by Iceland and Japan, and investigate the possibility at national level to bring attention to ICES activities;*
- note the on-going work under the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean, and investigate the possibility at national level to bring attention to ICES activities.*

### **UN Ocean Decade**

Following the proclamation in December 2017 by the UN General Assembly of the United Nations Decade of Ocean Science for Sustainable Development, 2021-2030 (UN Ocean Decade - UNDOS), an Implementation Plan has been submitted for endorsement by the 2020 UN General Assembly.

Seven key societal outcomes are the focus of the Ocean Decade, confirming the importance, of ocean science and observations for ocean stewardship and society:

1. A clean ocean where sources of pollution are identified and reduced or removed.
2. A healthy and resilient ocean where marine ecosystems are understood, protected, restored and managed.
3. A productive ocean supporting sustainable food supply and a sustainable ocean economy.
4. A predicted ocean where society understands and can respond to changing ocean conditions.
5. A safe ocean where life and livelihoods are protected from ocean-related hazards.
6. An accessible ocean with open and equitable access to data, information and technology and innovation.
7. An inspiring and engaging ocean where society understands and values the ocean in relation to human wellbeing and sustainable development.

Throughout the process ICES has related our work to the UN Ocean Decade;

- mapping the ICES science plan to the key societal outcomes,
- participating in the First Global Planning Meeting, Copenhagen, May, 2019, as well as the North Atlantic regional workshop, Halifax, January 2020, one of several regional workshops, to identify regional specific priorities and requirements, as well as contributions to UN Ocean Decade,
- submitting comments, jointly with PICES, to the first version of the Ocean Decade Implementation Plan, and
- bringing this to the attention of the ICES/PICES delegates in a letter of 6 April 2020, encouraging a review of the draft Implementation Plan for the UN Ocean Decade keeping in mind the possibility of joint ICES/PICES projects, as well as consider providing support for joint ICES/PICES activities as part of any national strategy to contribute to the UN Ocean Decade.

Following up on this a proposal for a Joint ICES Council Strategic Initiative/PICES Study Group to plan participation in the UN Decade of Ocean Science (ICES–PICES Ocean Decade) was submitted for approval by 21 September to the ICES and PICES delegates. Information was provided to ICES Delegates on the [Council Forum](#).

The aim with the joint Group is to seek ways to leverage the established structures of our organizations, and on-going work within ICES and PICES, supported by 23 northern hemisphere member countries. Thereby, building on existing work and building on that to address gaps in knowledge. In this way we can ensure that we take advantage of the important opportunity provided by the UN Ocean Decade, and support our Member Countries in their endeavours to contribute.

The joint Group is anticipated to work for one year, with the following ToRs:

- outline the joint scientific activities that would be of interest for ICES and PICES, where our regional expertise can provide leadership, and where it could be beneficial to work together with other partner organizations,
- draft a strategy to prioritize engagement of Early Career Scientists, indigenous communities, developing nations, and recognizing the importance of promoting diversity and gender equity in our activities
- develop a UN Ocean Decade Programme
- develop recommendations for new and existing ICES/PICES Expert Working Groups to implement and maintain the programme activities

The joint Group will be chaired by Steven Bograd, USA representing PICES, Arran McPherson, CA, representing both ICES and PICES, and a third co-chair (TBC; aiming for broader transatlantic representation).

To take full advantage of the UN Ocean Decade a joint ICES/PICES ASC/Annual meeting is being discussed for 2023, with US hosting.

## 1.1 Arctic

As part of the UN Ocean Decade a first Arctic Ocean Decade Workshop was arranged in Tromsø Norway, in January 2020. This was to be followed by a three-day workshop in April in Copenhagen, Denmark. Due to the COVID-19 pandemic this was transformed into a series of online workshops to be arranged throughout the autumn. Seven working groups, following the key societal outcomes of the UN Ocean Decade will take place in October/November.

Anne Christine Brusendorff, ICES General Secretary, and Henry Huntington, the Ocean Conservancy, USA will co-chair working group 3, – A Productive Ocean. The third Arctic Science Ministerial (ASM3) has been postponed to 8–9 May 2021 in Tokyo, Japan. ICES and PICES have jointly provided responses to the ASM3 survey on international collaboration and cooperation, upon request by the co-hosts Iceland and Japan. A vital element of ASM3 is the development of education and capacity building for future generations, with an emphasis both on scientific and local knowledge in Arctic and non-Arctic States.

Past events:

- the first meeting in 2016 in Washington, organized to increase cooperation in Arctic science, with participation from Science Ministers from 25 governments, the European Union and representatives from Arctic indigenous peoples' organizations.
- the second meeting in 2018 in Berlin, co-hosted by the European Commission, the Republic of Finland and the Federal Republic of Germany, focusing on strengthening collaboration in Arctic research.

The first meeting of the Provisional Scientific Coordinating Group established during the first Preparatory Meeting of the Signatories to the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean took place in Ispra, February 2020. The ACOM Chair, Mark Dickey-Collas attended, presenting ICES work on “Accountability in knowledge production – ensuring transparency and traceability of the evidence base for fisheries management”, as well as our linkages with PICES.

## 1.2 ICES PICES Cooperation

ICES and PICES have since the formalization of their cooperation in 1998 established a strong and fruitful cooperation, of benefit for the Member Countries and the state of marine science and scientific advice, given that ICES and PICES are the two leading scientific organizations in the Northern Hemisphere.

In order to respond to emerging issues where science is needed to inform new policies and decision-making, it is important to draw on existing knowledge and structures to identify and fill gaps. ICES and PICES have been working together to proactively disseminate joint documents that highlight on-going work of relevance within ICES and PICES, the utility of our established structures, and the wide geographic scope, of our 23 northern hemisphere member countries.

Documents describing the potential contribution of ICES and PICES have been provided for:

- 2018 concluded Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean, [cf. the joint paper](#)
- the ongoing discussions on a new legal regime on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction, for which the above document describes ICES/PICES work in this areas, and the [document under this link](#) describes ICES advice and science in areas beyond national jurisdiction
- the above described UN Ocean Decade, and the proposal for a joint ICES/PICES Study Group/Council Strategic Initiative on the UN Decade of Ocean Science (SG-UN Ocean Decade).

Below is an outline of the long-standing ICES/PICES cooperation.

### 1.3 Long-standing cooperation

Over the past 20 years, ICES and PICES have worked together to establish joint expert groups within areas of common interest, making use of the respective organizational structures and networks, and importantly, finding synergies between the complimentary expertise in the two scientific communities.

The cooperation has taken place through joint workshops, expert groups, symposia and conferences. Below is a summary of joint activities, with a more detailed list of activities provided in sections 1.3.5 and 1.3.6 of this document.

#### 1.3.1 Co-sponsored conference/science symposia on a diverse range of topics of common scientific interest, since 2003

Most notably:

- the symposia series on effects of climate change on the world's oceans, inception in 2008, Gijon, Spain
- the symposia series on zooplankton production, first co-sponsored by ICES and PICES (and GLOBEC) in 2003
- opening new common research fields, for instance on the human dimension, first in 2008 jointly with FAO, continued in 2016 with the MSEAS conference, Brest, France (Understanding marine socio-ecological systems: including the human dimension in Integrated Ecosystem Assessments)

Importantly these symposia have been co-sponsored with other intergovernmental organizations (IOC, FAO, GLOBEC, SCOR, NOAA, NPRB, WCRP and, NASCO, NPAFC and other RFMO's), and thus strengthened the scope and impact of this science, strengthening cooperation across different communities, as well as different fields, and encouraging the uptake of emerging science as evidence for decision-making.

#### 1.3.2 Early Career Scientists Conferences

The Early Career Scientists Conferences, started in 1999 by ICES, and since 2007 a regular 5-year event jointly with PICES, NOAA and local funding. The upcoming

2022 Conference will be hosted by Canada, as part of their contribution to the UN Decade of Ocean Science for Sustainable Development.

### **1.3.3 Joint working groups, workshops and strategic initiatives/study groups:**

- 2010, joint P/ICES study group on strategic cooperation (PICES Science Board, SCICOM and secretariat membership)
- Established in 2010; the Strategic Initiative on Climate Change Impacts on the Marine Environment (SICCME), workshops plus one science symposium (Sendai 2010)
- jointly with GLOBEC and its ESSAS Regional Programme, workshops on climate models, and Arctic sea ice
- jointly with IOC and SCOR workshop on harmful algal blooms
- Since 2007, cooperation through joint working groups (joint meeting of PICES WG21 and ICES WGITMO on non-native species)
- continued 2008 (joint meeting of ICES WGEIM with PICES scientists on environmental interactions of mariculture)
- most recently established joint working groups on:
  - climate change and biologically-driven ocean carbon sequestration,
  - ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean
  - integrated Ecosystem Assessment of the Northern Bering Sea-Chukchi Sea, and
  - a proposal (2020) for a Study Group/Council Strategic Initiative on the UN Decade of Ocean Science (SG/CSI-UN Ocean Decade) is being developed.

### **1.3.4 Co-sponsored Theme sessions at annual science meetings**

- Since 2005 PICES co-sponsored conveners of theme sessions on a diverse range of topics of common scientific interest at ICES ASCs
- Since 2007 ICES co-sponsored conveners of topic sessions or workshops at PICES Annual Meetings since, respectively

### **1.3.5 Symposia**

**ICES/PICES/GLOBEC Symposium on "The role of zooplankton in Global Ecosystem Dynamics: Comparative studies from World Oceans"**  
20-23 May 2003, Gijón, Spain

**IRD/IMARPE/FAO/ICES/PICES Symposium on "The Humboldt Current System: Climate, ocean dynamics, ecosystem processes, and fisheries"**  
27 November to 1 December 2006, Lima, Peru

**1<sup>st</sup> ICES/PICES Early Career Scientists Conference**  
26 - 29 June 2007, Baltimore, USA

**NAFO/PICES/ICES Symposium on Reproductive and Recruitment Processes in Exploited Marine Fish Stocks**  
1–3 October 2007, Lisbon, Portugal

**ICES/PICES/GLOBEC Symposium "The 4th International Zooplankton Production Symposium"**  
28 May - 1 June 2007, Hiroshima, Japan

**ICES/PICES Symposium on "Marine Bioinvasions"**  
21 - 24 May 2007, Cambridge, Massachusetts, USA

**ICES/PICES Symposium on the Ocean in a High-CO2 World**  
6–9 October 2008, Monaco

**ICES/PICES/FAO/GLOBEC Symposium on Coping with global change in marine socio-ecological systems**  
8–11 July 2008, Rome, Italy

**ICES/PICES Symposium on Herring: Linking biology, ecology, and status of populations in a changing environment**  
26 - 29 August 2008, Galway, Ireland

**ICES/PICES/IOC Symposium on "Effects of Climate Change on the World Oceans"**  
19 - 23 May 2008, Gijón, Spain

**ICES Symposium on Rebuilding Depleted Fish Stocks - Biology, Ecology, Social Science and Management Strategies**  
3–6 November 2009, Warnemünde/Rostock, Germany

**ICES/PICES Sixth International Conference on Marine Bioinvasions**  
24–27 August 2009, Portland, Oregon, USA

**ICES/PICES/GLOBEC Symposium on "Marine Ecosystems: from function to prediction"**  
22–26 June 2009, Victoria, Canada

**(ICES/PICES) 26th Lowell Wakefield Symposium on "Ecosystems 2010: Global Progress on Ecosystem-based Fisheries Management"**  
8-11 November 2010, Anchorage, USA

**ICES/PICES/FAO Symposium on "Climate Change Effects on Fish and Fisheries: Forecasting Impacts, Assessing Ecosystem Responses, and Evaluating Management Strategies"**  
26-29 April 2010, Sendai, Japan

**ICES/PICES/NASCO Symposium on 'Salmon at Sea: Scientific Advances and their Implications for Management'**  
11–13 October 2011, La Rochelle, France

**ICES/PICES/ESSAS Symposium on "Comparative studies of climate effects on polar and sub-polar ocean ecosystems: progress in observation and prediction"**  
22-26 May 2011, Seattle, USA



**ICES/PICES 5th International Zooplankton Production Symposium**  
14–18 March 2011, Pucon, Chile

**2nd ICES/PICES Early Career Scientists Conference: Oceans of Change**  
24-27 May 2012, Palma de Mallorca, Spain

**ICES/PICES Symposium on "Forage fish interactions: Creating the tools for ecosystem based management of marine resources"**  
12-14 November 2012, Nantes, France

**ICES/PICES/IOC Second International Symposium on the Effects of climate change on the world's oceans**  
15-19 May 2012, Yeosu, Korea

**ICES/PICES Symposium on "Ecological basis of risk analysis for marine ecosystems"**  
2-4 June 2014, Porvoo, Finland

**ICES/PICES/IOC Third International Symposium on the Effects of Climate Change on the World's Oceans**  
23-27 March 2015, Santos, Brasil

**ICES/PICES 6th International Zooplankton Production Symposium**  
9-13 May 2016, Bergen, Norway

**ICES/PICES/CSIRO Symposium on Understanding marine socio-ecological systems: including the human dimensions in Integrated Ecosystem Assessments**  
30 May - 3 June 2016, Brest, France

**ICES/PICES Symposium on "Drivers of dynamics of small pelagic neritic fish resources"**  
6-11 March 2017, Victoria BC, Canada

**3rd ICES/PICES Early Career Scientist Conference: "Climate, Oceans and Society: Challenges & Opportunities"**  
30 May – 2 June 2017, Busan, Korea

**ESSAS Symposium on "Moving in, out and across the Subarctic and Arctic - shifting boundaries of water, ice, flora, fauna, people and institutions"**  
12-16 June 2018, Tromsø, Norway

**4th ICES/PICES/IOC Symposium on Climate Change and Impacts on the World's Oceans**  
4-8 June, 2018, Washington D.C., USA

**Shellfish - Resources and Invaders of the North symposium**  
5-7 November 2019, Tromsø, Norway

**MSEAS 2020/2021 Marine Socio-Ecological Systems: Navigating global change in the marine environment with socio-ecological knowledge** Postponed to 2021, TBD

**Upcoming:**

**ICES/PICES Symposium: Small Pelagic Fish: New Frontiers in Science for Sustainable Management**, 21-24 February, 2022, Lisbon, Portugal

**ICES/PICES 7th International Zooplankton Production Symposium** Spring 2022 (TBD)

**4th ICES/PICES Early Career Scientist Conference** May 2022 (TBD)

**1.3.6 Workshops and joint meetings**

Cooperation of ICES WGITMO and PICES WG 21 on non-indigenous species; first joint meeting **2007** (WG 21 closed down 2013)

Joint meeting of ICES WGEIM and PICES scientists on environmental interactions of mariculture, 14-18 April **2008**, Victoria BC, Canada

**ICES/PICES/GLOBEC Workshop**

Changes in distribution and abundance of clupeiform small pelagic fish in relation to climate variability and global change

**Place:** Kiel, Germany **2008, Nov 3-7**

**2010, Apr 29-30**

**Inter-sessional Meeting of PICES-ICES Working Group**

on [Forecasting Climate Change Impacts on Fish and Shellfish](#)

**Place:** Sendai, Japan

**2011, May 2-6**

**ICES/PICES workshop**

Reaction of northern hemisphere ecosystems to climate events: A comparison

**Place:** Hamburg, Germany

**2011, May 22**

**PICES-ICES Working Group Meeting**

Meetings of the PICES-ICES Working Group on [Forecasting Climate Change Impacts on Fish and Shellfish \(WGFCCIFS\)](#) in conjunction with the [2nd ESSAS Open Science Meeting](#) (May 22, 2011) and the 2011 ICES Annual Science Conference

**Place:** Seattle, USA

**2011, May 22**

**ICES/PICES Workshop**

*Biological consequences of a decrease in sea ice in Arctic and sub-Arctic Seas* in conjunction with the [2nd ESSAS Open Science Meeting](#)

**Place:** Seattle, USA

**2012, Sept 8-10**

**ICES/PICES/GLOBEC Workshop**

Forecasting Ecosystem Indicators with Climate-driven Process Models

**Place:** Friday Harbor Labs, WA, USA

**2013, Mar 18-22**

**ICES/PICES/GEOHAB (IOC-SCOR) Workshop**

Harmful algal blooms in a changing world

**Place:** Friday Harbor, WA, USA

**2013, May 22-24**

**PICES/ICES Workshop**

Global assessment of the implications of climate change on the spatial distribution of fish and fisheries

**Place:** St. Petersburg, Russia

**2016** ICES/PICES Working Group on Climate Change and Biologically-driven Ocean Carbon Sequestration **2016-2020**

**WGICA**

ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean **Place:** Denmark, USA, Canada, Japan, Webex **2020, Mar 9-11**

**WGSPF**

Joint ICES/PICES Working Group on Small Pelagic Fish **Place:** Copenhagen, Denmark

**2020, Sep 7-10**

**WGGRAFY**

Joint ICES/PICES Working Group on Impacts of Climate Warming on Growth Rates and Fisheries Yields **Place:** Webex **2020, TBD**

**WGIEANBS-CS**

ICES/PICES Working Group on Integrated Ecosystem Assessment of the Northern Bering Sea-Chukchi Sea **Place:** TBD

**WGONCE (approved by PICES, names to be formally nominated; to be approved by ICES in the 2020 November resolutions package)**

Working Group on Ocean Negative Carbon Emission

## Joint PICES Study Group/ICES Council Strategic Initiative to plan participation in the UN Decade of Ocean Science (ICES–PICES Ocean Decade)

**Parent Committee:** PICES Science Board/ICES Council

**Term:** September 2020 – August 2021

**Proposed Chairs:** Steven Bograd (USA; PICES FUTURE SSC) and to be determined (ICES)

### Description

The UN Decade of Ocean Science for Sustainable Development provides an unprecedented opportunity to strengthen and expand the collaborative science between ICES and PICES and with other partner organizations. ICES and PICES are scientific organizations that interact and engage with an array of different groups, from academia, policy, civil society, industry, and foundations throughout the Northern Hemisphere, and through partnerships and specific agreements we are also increasing our presence in the Southern Hemisphere. Our two organizations play leading roles in advancing and communicating scientific understanding of marine ecosystems for societal outcomes. Our partnership brings together diverse networks to increase the overall capacity to conduct ocean science in support of sustainable development and to foster the range of skills necessary to support broad and overarching marine science goals. With the proposed ICES–PICES Ocean Decade, we will consolidate a strategic plan to bring about transformational science during the UN Decade of Ocean Science for Sustainable Development (UN Ocean Decade; 2021–2030) by building upon our long history of successful partnerships in advancement of marine science.

An ad-hoc group of ICES and PICES scientists has been engaged since October 2019 in bilateral discussions on joint activities in support of the UN Ocean Decade (see Appendix A). The strategic plans and objectives of both organizations are well-aligned with UN Ocean Decade objectives, positioning ICES, PICES and their associated networks to play a leading role in addressing UN Ocean Decade priorities and societal outcomes. The purpose of the proposed ICES–PICES Ocean Decade is threefold: (a) to establish a common strategy for joint activities, and to provide regional leadership in support of the UN Ocean Decade; (b) to identify and strengthen relationships with partner professional and multilateral organizations to facilitate UN Ocean Decade engagement; and (c) to develop a UN Ocean Decade Programme<sup>1</sup> for endorsement by the IOC. Our Programme proposal will support and leverage ICES, PICES, and member countries' priorities and initiatives related to the UN Ocean Decade, by emphasizing areas of mutual research interest and policy needs, including climate change, fisheries and

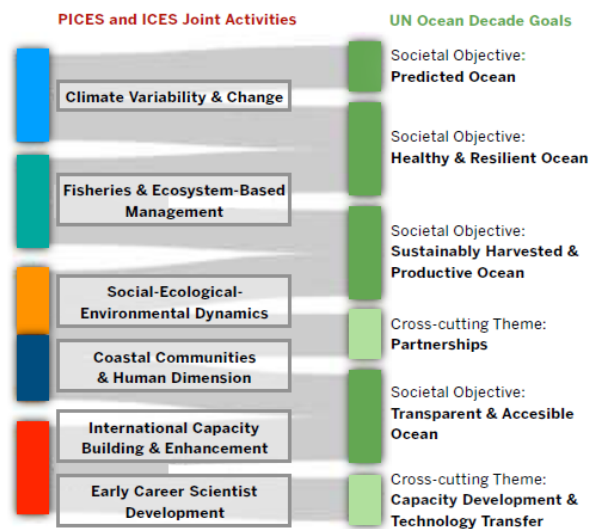


Figure 1: Mapping of ICES and PICES core activities and focus areas onto UN Ocean Decade societal objectives and cross-cutting themes.

<sup>1</sup> A Decade programme is global or regional in scale and will contribute to the achievement of one or more of the Ocean Decade Challenges. It is long-term (multi-year), interdisciplinary and multi-national. A programme will consist of component projects, and potentially enabling activities

ecosystem-based management, social, ecological and environmental dynamics of marine systems, coastal communities and human dimensions, and communication and capacity development (Figure 1). The ICES–PICES Ocean Decade will also incorporate strategies to facilitate UN Ocean Decade cross-cutting inclusivity themes relating to gender equality, early career ocean professional engagement, and significant involvement of indigenous communities and developing nations in the planning and implementation of joint activities. Likewise, the ICES–PICES Ocean Decade will include a scoping exercise and dialogue with decision-makers and stakeholders.

### **Linkages to previous Joint ICES-PICES Expert Groups or activities:**

There is a long and productive history of joint ICES-PICES expert groups working on topics such as *Forecasting Climate Change Impacts on Fish and Shellfish*, *Climate Change and Biologically-driven Ocean Carbon Sequestration*, *Integrated Ecosystem Assessment for the Central Arctic Ocean*, also joint with PAME), *Small Pelagic Fish*, *Integrated Ecosystem Assessment for the Northern Bering Sea - Chukchi Sea*, and strategic initiatives on Climate Change and Marine Ecosystems as well as others. The proposed ICES–PICES Ocean Decade is intended to formalize and build upon the momentum of the ICES-PICES ad hoc group that has been discussing joint UN Ocean Decade. Additionally, the proposed ICES–PICES Ocean Decade will leverage ongoing efforts in ICES and PICES including developing a network of Early Career Ocean Professionals, and the joint Early Career Scientist conference planned for May 2022, which will have a UN Ocean Decade focus.

### **Linkages/Contributions to the PICES FUTURE Science Program**

The FUTURE Science Program shares many of the goals of the UN Ocean Decade. Following discussions within the FUTURE Scientific Steering Committee and PICES Science Board, the FUTURE program is developing a Phase III Strategic & Implementation Plan that positions FUTURE to provide the scientific and organizational infrastructure to implement the activities of UN Ocean Decade in the North Pacific. The proposed ICES–PICES Ocean Decade will establish a strategic plan to allow the FUTURE SSC and PICES Science Board to effectively accomplish this mission, in partnership with ICES and other organizations.

### **Linkages/Contributions to the ICES Strategic and Science plans and PICES Science Plan**

The ICES Strategic and Science plans and PICES Science Plan encompass the goals of the UN Ocean Decade, with science priorities directly addressing the expected societal outcomes of the UN Ocean Decade. However, a more concrete and strategic engagement for the benefit for both organizations, its member countries and scientists, and support for collaboration between the organizations requires strategic planning.

### **Linkages to other organizations and programs**

A key objective of the proposed ICES–PICES Ocean Decade is to identify and facilitate engagement of partner organizations to implement joint UN Ocean Decade activities, that will enhance communication and outreach to diverse stakeholders. In particular, we acknowledge the ‘Coastal Indigenous Peoples’ Declaration at OceanObs’19’ to “establish meaningful partnerships with indigenous communities, organizations, and Nations to learn and respect each other’s ways of knowing; negotiate paths forward to design, develop, and carry out ocean observing initiatives; and share responsibility and resources”. We will engage with organizations that have capacity to bring traditional/indigenous knowledge into our activities. We will also develop partnerships with organizations active in regions outside our formal membership.

### **Terms of Reference:**

1. Define and describe the joint scientific activities of ICES, PICES and partner organizations that will contribute to UN Ocean Decade societal outcomes.
2. Draft a strategy that prioritizes engagement with early career ocean professionals, indigenous communities, developing nations, and recognizes the importance of promoting diversity and gender equity in our activities.
3. Identify and engage partner organizations to ensure their full participation in this process.
4. Develop a UN Ocean Decade Programme<sup>1</sup> proposal for endorsement by UNESCO-IOC, with new and existing partners, allowing for participation of additional partners throughout the Decade.
5. Develop recommendations for new and existing ICES and PICES Expert Groups to implement and maintain the Programme activities, and also encourage and support expert group participation in all aspects of the UN Ocean Decade.

### **Proposed Membership:**

#### **PICES:**

Steven Bograd (Co-Chair, FUTURE SSC): Proposed Chair  
Manu Di Lorenzo (USA)  
Oleg Katugin (Russia)  
Mitsutaku Makino (Japan)  
Fangli Qiao (China)  
Hiroaki Saito (Japan)  
Erin Satterthwaite (USA)  
Vera Trainer (Chair, Science Board)  
Sinjae Yoo (Korea)  
Akash Sastri (Canada)

#### **Others?**

#### **ICES:**

Anne Christine Brusendorff  
Ellen Johannesen  
Bill Karp  
Jorn Schmidt

#### **Others**

## APPENDIX A: ICES-PICES Joint Statement on UN Decade of Ocean Science

# The UN Decade of Ocean Science for Sustainable Development - An ICES/PICES contribution

6 April 2020

Dear Governing Council members, and Council Delegates,

As you are aware, PICES and ICES individually have indicated their strong support for the Ocean Decade and have participated in various global and regional planning workshops, including those with a specific focus on the North Atlantic, and the North Pacific hemisphere.

We have also been in active communications with our research partners, key Intergovernmental Oceanographic Commission (IOC) staff and members of the Executive Planning Group for the Ocean Decade. Perhaps more importantly, ICES and PICES have been in regular bilateral discussions on joint ICES and PICES activities for the Ocean Decade. The strategic plans and objectives of both organizations are well-aligned with the Ocean Decade objectives and we have experience in successfully conducting joint research across our organizations and associated networks. Frankly, we believe that ICES, PICES and our associated networks have a great deal of expertise and experience to "bring to the table" for the Ocean Decade priorities and societal outcomes.

We have identified multiple potential project areas, but the leading candidate is an expansion of the current joint ICES/PICES activity on Climate Change and Marine Ecosystems, with an enhanced focus on credible projections of the state of future marine ecosystems, including fish, fisheries, aquaculture and dependent communities. We think this is an activity that ICES and PICES are ideally positioned to lead and is central to the science objectives for our organizations and the Ocean Decade.

It is clear that a substantive contribution to the Ocean Decade will require activities and investments that go beyond the "business as usual" activities of our organizations. In particular, Ocean Decade activities will likely require:

1. An expansion of our activities to other geographic areas, beyond the North Pacific and the North Atlantic. We don't plan to change the constitutions of our organizations. Rather we plan to seek new partner organizations to achieve this for the Ocean Decade period;
2. A larger commitment to capacity building/ capacity development in non-member countries, particularly Small Island Developing States (SIDS) and Least Developed Countries (LDC). We have some limited experience with this;
3. A new commitment to engage/work with indigenous communities and other under-represented groups. We plan to seek new partner organizations to achieve this for the Ocean Decade period;
4. A larger investment in outreach/ocean literacy activities;
5. An increased emphasis on supporting Early Career Scientists/Early Career Ocean Professional and providing roles for them in joint Ocean Decade activities. This will include a gender equality focus. Our organizations have already taken some steps in this direction, including planning for the 5th ICES/PICES Early Career Scientist Conference in 2022 with an Ocean Decade theme. Canada has agreed to be the local host for this event.

IOC is also consulting directly with their member states and IOC representatives in your countries will have received documents for comment. We have attached the e-mail that was sent out by IOC asking for comments to the Zero Draft of the Ocean Decade Implementation Plan, for your further reference.

We encourage you to:

- connect with these representatives and discuss the potential role of joint ICES/PICES activities (not restricted to the project discussed above).

- Review the draft Implementation Plan for the Ocean Decade keeping in mind the possibility of joint ICES/PICES projects.
- Consider providing support for joint ICES/PICES activities as part of any national strategy to contribute to the Ocean Decade. As you can see from the information above credible Ocean Decade projects imply a scaling-up of current science activities and investments in non-traditional areas for our organizations for the Ocean Decade period.

We would be happy to discuss these ideas with you or your representatives.

Sincerely from the informal ICES—PICES study group on the Decade of Ocean Science,

Anne Christine Brusendorff, Bill Karp, Ellen Johannesen, Emanuele Di Lorenzo, Erin Satterthwaite, Hal Batchelder, Hiroaki Saito, Robin Brown, Steven Bograd, Vera Trainer



## **Joint PICES Study Group/ICES Council Strategic Initiative to plan participation in the UN Decade of Ocean Science (ICES–PICES Ocean Decade)**

**Parent Committee:** PICES Science Board/ICES Council

**Term:** October 2020 – September 2021

**Proposed Chairs:** Steven Bograd (USA; PICES FUTURE SSC), **TBD (Western Pacific; PICES)**; Sissel Rogne (Norway; ICES), Arran McPherson (Canada; ICES) --- TBD

### **Description**

The UN Decade of Ocean Science for Sustainable Development provides an unprecedented opportunity to strengthen and expand the collaborative science between ICES and PICES and with other partner organizations. ICES and PICES are scientific organizations that interact and engage with an array of different groups, from academia, policy, civil society, industry, and foundations throughout the Northern Hemisphere, and through partnerships and specific agreements we are also increasing our presence in the Southern Hemisphere. Our two organizations play leading roles in advancing and communicating scientific understanding of marine ecosystems for societal outcomes. Our partnership brings together diverse networks to increase the overall capacity to conduct ocean science in support of sustainable development and to foster the range of skills necessary to support broad and overarching marine science goals. With the proposed ICES–PICES Ocean Decade, we will consolidate a strategic plan to bring about transformational science during the UN Decade of Ocean Science for Sustainable Development (UN Ocean Decade; 2021–2030) by building upon our long history of successful partnerships in advancement of marine science.

An ad-hoc group of ICES and PICES scientists has been engaged since October 2019 in bilateral discussions on joint activities in support of the UN Ocean Decade (see Appendix A). The strategic plans and objectives of both organizations are well-aligned with UN Ocean Decade objectives, positioning ICES, PICES and their associated networks to play a leading role in addressing UN Ocean Decade priorities and societal outcomes. The purpose of the proposed ICES–PICES Ocean Decade is threefold: (a) to establish a common strategy for joint activities, and to provide regional leadership in support of the UN Ocean Decade; (b) to identify and strengthen relationships with partner professional and multilateral organizations to facilitate UN Ocean Decade engagement; and (c) to develop a UN Ocean Decade Programme<sup>1</sup> for endorsement by the IOC. Our Programme proposal will support and leverage ICES, PICES, and member countries' priorities and initiatives related to the UN Ocean Decade, by emphasizing areas of mutual research interest and policy needs,

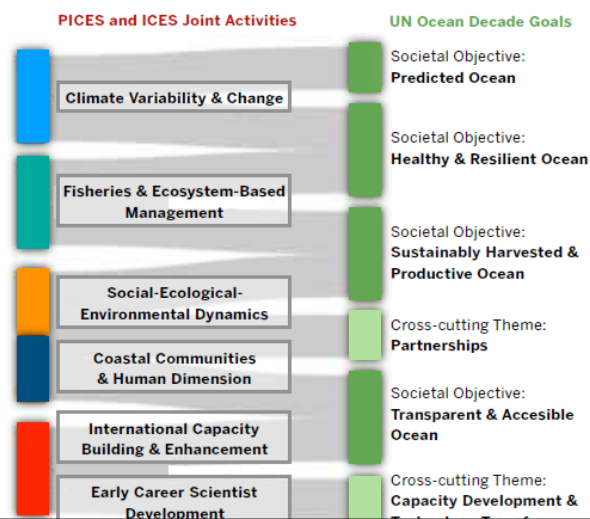


Figure 1: Mapping of ICES and PICES core activities and focus areas onto UN Ocean Decade societal objectives and cross-cutting themes.

<sup>1</sup> A Decade programme is global or regional in scale and will contribute to the achievement of one or more of the Ocean Decade Challenges. It is long-term (multi-year), interdisciplinary and multi-national. A programme will consist of component projects, and potentially enabling activities

including climate change, fisheries and ecosystem-based management, social, ecological and environmental dynamics of marine systems, coastal communities and human dimensions, and communication and capacity development (Figure 1). The ICES–PICES Ocean Decade will also incorporate strategies to facilitate UN Ocean Decade cross-cutting inclusivity themes relating to gender equality, early career ocean professional engagement, and significant involvement of indigenous communities and developing nations in the planning and implementation of joint activities. Likewise, the ICES–PICES Ocean Decade will include a scoping exercise and dialogue with decision-makers and stakeholders.

### **Linkages to previous Joint ICES-PICES Expert Groups or activities:**

There is a long and productive history of joint ICES-PICES expert groups working on topics such as *Forecasting Climate Change Impacts on Fish and Shellfish*, *Climate Change and Biologically-driven Ocean Carbon Sequestration*, *Integrated Ecosystem Assessment for the Central Arctic Ocean*, also joint with PAME), *Small Pelagic Fish*, *Integrated Ecosystem Assessment for the Northern Bering Sea - Chukchi Sea*, and strategic initiatives on Climate Change and Marine Ecosystems as well as others. The proposed ICES–PICES Ocean Decade is intended to formalize and build upon the momentum of the ICES-PICES ad hoc group that has been discussing joint UN Ocean Decade. Additionally, the proposed ICES–PICES Ocean Decade will leverage ongoing efforts in ICES and PICES including developing a network of Early Career Ocean Professionals, and the joint Early Career Scientist conference planned for May 2022, which will have a UN Ocean Decade focus.

### **Linkages/Contributions to the PICES FUTURE Science Program**

The FUTURE Science Program shares many of the goals of the UN Ocean Decade, **and will lead efforts to scope and coordinate PICES engagement in the Decade**. Following discussions within the FUTURE Scientific Steering Committee and PICES Science Board, the FUTURE program is developing a Phase III Strategic & Implementation Plan that positions FUTURE to provide the scientific and organizational infrastructure to implement the activities of UN Ocean Decade in the North Pacific. The proposed ICES–PICES Ocean Decade will establish a strategic plan to allow the FUTURE SSC and PICES Science Board to effectively accomplish this mission, in partnership with ICES and other organizations.

### **Linkages/Contributions to the ICES Strategic and Science plans and PICES Science Plan**

The ICES Strategic and Science plans and PICES Science Plan encompass the goals of the UN Ocean Decade, with science priorities directly addressing the expected societal outcomes of the UN Ocean Decade. However, a more concrete and strategic engagement for the benefit for both organizations, its member countries and scientists, and support for collaboration between the organizations requires strategic planning.

### **Linkages to other organizations and programs**

A key objective of the proposed ICES–PICES Ocean Decade is to identify and facilitate engagement of partner organizations to implement joint UN Ocean Decade activities, that will enhance communication and outreach to diverse stakeholders. In particular, we acknowledge the ‘Coastal Indigenous Peoples’ Declaration at OceanObs’19 to “establish meaningful partnerships with indigenous communities, organizations, and Nations to learn and respect each other’s ways of knowing; negotiate paths forward to design, develop, and carry out ocean observing initiatives; and share responsibility and resources”. We will engage with organizations that have capacity to bring traditional/indigenous knowledge into our activities. We will also develop partnerships with organizations active in regions outside our formal membership.

### **Terms of Reference:**

1. Define and describe the joint scientific activities of ICES, PICES and partner organizations that will contribute to UN Ocean Decade societal outcomes.
2. Draft a strategy that prioritizes engagement with early career ocean professionals, indigenous communities, developing nations, and recognizes the importance of promoting diversity and gender equity in our activities.
3. Identify and engage partner organizations to ensure their full participation in this process.
4. Develop a UN Ocean Decade **Activity** proposal for endorsement by UNESCO-IOC, with new and existing partners, allowing for participation of additional partners throughout the Decade.
5. Develop recommendations for new and existing ICES and PICES Expert Groups to implement and maintain the Programme activities, and also encourage and support expert group participation in all aspects of the UN Ocean Decade.

**PICES Membership:** We seek broad representation from PICES to ensure national, gender, career stage and discipline balance. We request representation from existing joint ICES-PICES (e.g., S-CCME).

## APPENDIX A: ICES-PICES Joint Statement on UN Decade of Ocean Science

# The UN Decade of Ocean Science for Sustainable Development - An ICES/PICES contribution

6 April 2020

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**ICES**  
**CIEM**

International Council for  
the Exploration of the Sea  
Conseil International pour  
l'Exploration de la Mer

Council Meeting

October 2020

CM 2020 Del-Doc 11.2

Agenda item 11.2

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## Council Strategic Initiative Maritime Transatlantic Cooperation

*The remit of ICES, as described in [the Convention](#), makes it possible for Member Countries through their Council delegates and nationally appointed representatives in the Science and Advisory Committees to guide and direct trans-Atlantic cooperation, relaying scientific priorities, and building on existing services and products. To support and contribute to efforts and on-going discussions to strengthen transatlantic cooperation Council is invited to take note of the role of CSIMTC as a coordinating umbrella initiative, and to note the range of activities in recent years:*

- Regular high-level joint NOAA/DFO/ICES meetings began in 2019 (next will be in 2021). During the first meeting we identified several shared interests for transatlantic scientific cooperation in areas such as monitoring, data, stock assessment and capacity building. New EGs were established as a follow up.
- Regarding the capacity building topic, the WKEDU initiative is underway and will convene a virtual workshop in November/December to begin developing a Graduate/Post Graduate Education Strategy to Meet Future ICES Advisory Needs. Our goal is to facilitate collaboration among educational institutions in ICES Member Countries. Approximately 15 such institutions from Canada, the US and Europe will participate in the workshop.
- A joint NOAA ICES PICES process has been initiated to identify fisheries science goals and actions, which will contribute to the UN Decade of Ocean Science. "Fisheries Information and Data Management Modernization" has been suggested as a possible focus area which could lead a global initiative and cooperation with others bodies, such as UN agencies and/RFMOS
- Many ICES expert groups have a strong transatlantic emphasis. These include those working on Integrated Ecosystem Assessments, some survey EGs, and many EGs which focus on methodologies.

## Secretariat Report

*Council is invited to take note of the information provided in this report from Administration.*

### 1 Administrative systems

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#### 1.1 Resolutions database

Over the past few years, the ICES community, including SCICOM, ACOM, and Expert Group members, have asked for a more comprehensive overview of resolutions that is fully searchable and able to support broader reporting. As such, the Secretariat has been working closely with ACOM and SCICOM to develop a streamlined process for submission and tracking of resolutions. To date, the team has drafted updates of all resolution forms (expert groups, symposium, publications, and steering groups). We are currently finalizing the text of suggested examples of how to fill in these forms that will be helpful to the ICES community to ensure better consistency and completeness across various resolutions. The new forms also ensure that the resolutions include text that is helpful for forming the searchable database on all fields, including clear identification of ecoregions relevant to each resolution, close links to other organisations, and science and advice priorities. The technical aspects of the database and the workflow have also been formulated over the past few months, and will continue to need some development as the database continues to be developed. The Secretariat is now working on upgrading Microsoft Dynamics, the software that will support the resolutions database, so it can be integrated with our existing expert group meetings database (the Resource Coordination Tool – RCT). A draft of the online and offline forms have also been created for the symposium resolution, which we anticipate will be the first resolution rolled out for use in early December with the others to follow in 2021.

#### 1.2 Delegates Dashboard

The Delegate Dashboard is a customized view within the Resource Coordination Tool (RCT)—the database for storing information about all participants in ICES work and meeting activities. The Delegate Dashboard is designed especially for use by Council delegates to find an overview of all active nominations from their country. All delegates can access the Delegates Dashboard to view their active nominations and institutes. A specific national login and password has been provided (by email/December 2019) to all Council delegates. Please contact the Secretariat ([nominations@ices.dk](mailto:nominations@ices.dk)) if you require a reminder of your national login/password.



A future goal is to develop a portal for facilitating submission of nominations by member countries to ensure standardised and streamlined processing of information about the experts participating in ICES work.

The past years the Secretariat has processed 1823 nominations in 2018, 1340 nominations in 2019, and 760 nominations (to date) in 2020 (more expected in the remainder of 2020). This results in an average of 1307.6 nominations per year and significant time spent by Secretariat staff on processing nominations, through manual processes.

## **2 General Data Protection Regulation**

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Administration has been reviewing internal processes for compliance with the EU's General Data Protection Regulation (GDPR). As an international organization, ICES may not be bound by GDPR, however, it is good practice and the Secretariat aims to protect the personal data with which it is entrusted.

The requirements of GDPR may also affect the current nominations process, and a more structured process is being considered, also to collect greater demographic information about the network (e.g. gender).

Following an internal review process and engagement with a consultant, issues were identified and actions are being implemented to improve protection of the privacy of data subjects and improve compliance with GDPR.

## **3 Focus on the empowerment of women – cooperation with the World Maritime University**

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The Secretariat Administration is also working with the Global Ocean Institute at the World Maritime University on the project "[Empowering women for the United Nations Decade of Ocean Science for Sustainable Development](#)". A WMU team, including ICES Coordinating Officer, Ellen Johannesen will undertake research with a focus on gender equality and the empowerment of women in the conduct and delivery of ocean scientific research, in particular in relation to fisheries, oceanography, hydrography and climate change. A greater focus on collecting demographic information for the ICES network, in connection with nominations will be part of the project, in line with the Strategic Plan.

## **4 Human resources and Administration**

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### **4.1 Grade assessments**

A revised version of the job grade descriptors has been in progress since early 2019. The COVID-19 pandemic put a pause on this work in the spring of 2020, but further progress has been made over the summer. Two assessment tables have been produced—one for C-staff and one for P-Staff—which provide a general description of each grade according to the competencies and responsibilities required within 5 areas of each grade: Task, People Management, Strategy, Project



& Processes, Budget and Experience/Education. There are plans to now share a summary of the process with the wider Secretariat staff.

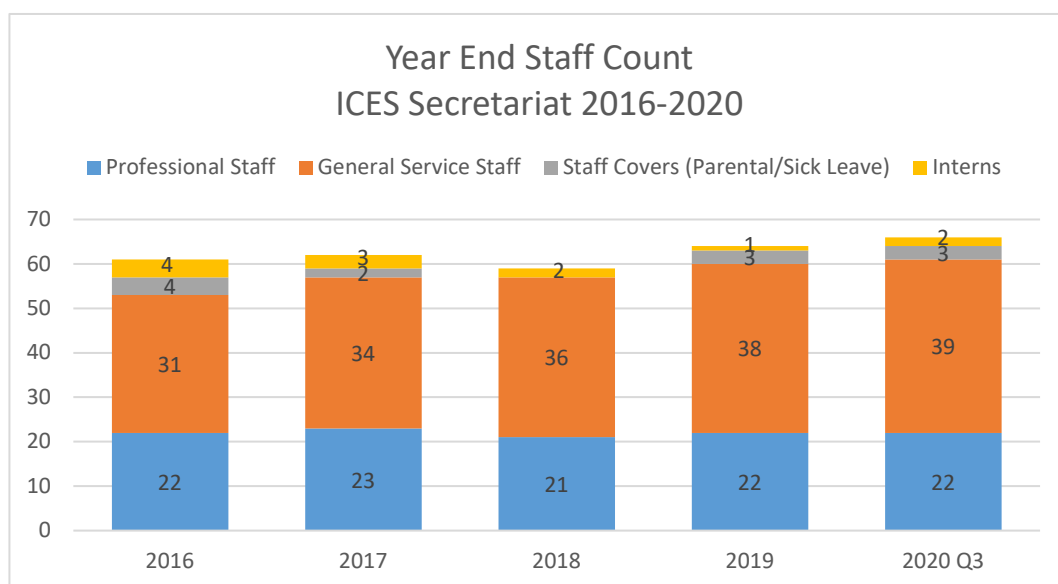
## 4.2 Recruitments

Recruitment for the Head of Finance was initiated in February 2020. Due to the COVID-19 pandemic, the recruitment process was drawn out longer than anticipated. After a highly competitive selection process (over 90 candidates), the panel offered the position to Søren Toft—a Dane with over 25 years of financial experience within the NGO sector. Søren joined the Secretariat team 1 October to help manage day-to-day operations as well as strengthen financial procedures.

Other recruitments in 2020 include finding replacements for outgoing staff or covers for those on extended leave or to find additional support to strategic initiative work areas.

## 4.3 Staffing trends and Changes 2020

Over the last 5 years, the Secretariat staff count has remained relatively stable, with an average of approximately 57 regular staff members.



In the third quarter of 2020, there were a total of 66 staff members employed (incl. 2 interns) of which were 37 women and 29 men. Currently 4 staff are funded by strategic investments.

### 4.3.1 New Staff 2020

	Start Date	Name	Note
	2 Jan 2020	<b>Amjad Iqbal</b> , Finance Officer	4-year contract
	10 Feb 2020	<b>Dávid Kulcsár</b> Editorial Assistant (Maternity Cover)	10-month contract
	27 Apr 2020	<b>Katla Björnsdóttir</b> Conference & Training Coordinator (Maternity Cover)	16-month contract
	27 Apr 2020	<b>Jan De Haes</b> Supporting Officer (Maternity Cover)	8-month contract
	6 Jul 2020	<b>Ihtsham Minhas</b> Data Programmer	4-year contract
	1 Oct 2020	<b>Søren Toft</b> Head of Finance	3-year contract

### 4.3.2 Contracts Ending in 2020

End Date	Name, Title	Note
29 Feb 2020	<b>Silvia Ferrando</b> Administration Officer	Contract concluded
30 Jun 2020	<b>Arni Magnusson</b> Professional Officer	Contract concluded

#### 4.4 Challenges for internationally-recruited staff

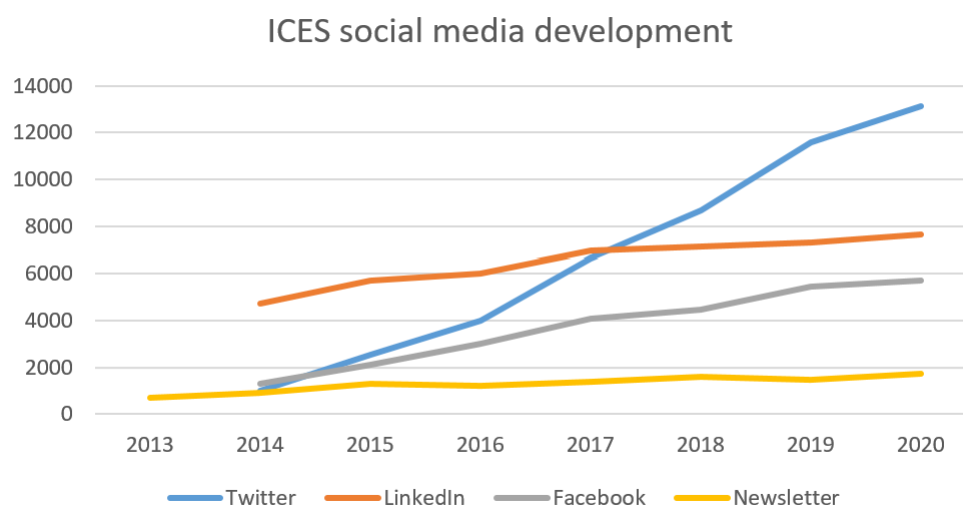
To help compensate for difficulties within the Danish healthcare system, the option for providing internationally-recruited staff access to a physician hotline is being investigated. This service will not replace one's normal general practitioner but is meant to serve as an English reference point for navigating the healthcare system.

We have seen several cases where staff who end their employment with ICES experience difficulty with taxation and/or social security when returning to their home countries. (Also relevant for external experts fulfilling time-limited contracts with ICES.) Investigation is underway on whether ICES standing in Denmark with regards to taxation and social security can be reflected in other ICES member countries. Once we have a positive outcome of these investigations, we will request a contact person in the ICES member countries to further this

## 5 Communications

The Communications department is currently working to develop a detailed overview of the wide range of communications support it provides to facilitate implementation of the ICES Strategic, Advisory, and Science plans.

Digital communications remain the focus for ICES communications activities: all news articles, event announcements, training courses, etc., are published on [ICES website](#) and shared in social media. ICES is currently active on three social media channels: [Twitter](#) (13148 followers), [LinkedIn](#) (7654 members), and [Facebook](#) (5489 follows) – numbers as of 14 September 2020. We have the fastest growing audience on Twitter, which is proven to be the most effective channel for sharing ICES information to a varied audience.



**Figure 1: The number of ICES social media channel and newsletter followers (14 Sep 2020).**

#### ICES news

[The bi-monthly e-newsletter](#) includes in-depth feature articles, written by scientists in our network, and currently has 1740 subscribers. Communications department also writes “Science highlights”, a series of news articles that highlight the work of our expert groups. The most recent articles in the series were about ICES science and advice in the changing Arctic: <https://www.ices.dk/news-and-events/news-archive/news/Pages/ICES-Science-Highlights-Arctic.aspx>

During this year, the news has also included [information about the COVID-19 pandemic effects on ICES work](#). This news piece is frequently updated, as the situation changes rapidly in Denmark and worldwide.

## Website

In order to improve the usability of ICES website, the Secretariat worked together with a website usability expert to restructure the site and develop some new design features. The project was completed and new structure implemented in the end of April 2020.

Since going live with the new structure, the communications department and SharePoint developer have been monitoring the site to address any possible errors and fix broken links promptly.

A lot of feedback and ideas were gathered during the restructuring project, such as changes to the meeting calendar and the display of expert groups. Some of these can be considered in the future, depending on financial and human resources. There are no plans for a complete redesign of the website at the moment.

## Outreach products and events

The communications department produces fact sheets on strategically important topics, which currently cover ICES work in general, and specifically ecosystem based management, areas beyond national jurisdiction (ABNJ), and jointly with PICES a more detailed description on our joint work in the Arctic. Fact sheets in the making cover ICES/PICES cooperation on climate change as well as in the Arctic, together with other organizations, and the impacts of fishing.

ICES communications is also responsible for creating infographics and outreach products, such as [the Annual Report](#). This year the Annual Report included short animations on the seven science priorities, which can be reused in other communications as well. All outreach products are available for Delegates, committee and EG members [on ICES Sharepoint](#).

A lot of effort is put into promoting ICES events: [the Annual Science Conference](#), including the ASC early career scientist events, [symposia](#), and this year also [the first ICES webinar](#).

## Networking

Since ASC 2015, the communications department has organized a networking meeting with member institute’s communications colleagues. The purpose of the meeting is to share news and exchange ideas on how to improve communications within and between ICES and the institutes. Last time in Gothenburg the meeting attracted 13 participants from six countries (Belgium, Denmark, Finland, Norway, Sweden, and the US). Next meeting is planned for ASC in Copenhagen in 2021.

## **6 Cooperation in Secretariat and with ACOM and SCICOM Chairs**

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Line Managers, in regular meetings (General Secretary, Head of Finance, Head of Advisory Support, Head of Science Support, as well as Head of Data and Information) and with the ACOM and SCICOM Chairs in Coordination Group meetings work to ensure best use of resources, involvement and agreement in establishing priorities, and communication on these issues.

The [joint work plan](#) discussed and reviewed in the Coordination Group also provides a useful basis for discussing and planning the use of shared staff resources.

## **7 Moving ICES HQ**

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In 2018, the Danish government announced plans to move ICES HQ to a new location in Copenhagen. Over the last two years, a great administrative effort has gone into compiling our facility needs, identifying a suitable relocation site, contacting suppliers and cooperating with Danish authorities. Due to coordination issues between the various Danish authorities involved in the move project, we still await a final answer on the project financing status and, thus, timeline of this move.

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