

Next Steps for Stewardship of the Sargasso Sea

*Bermuda Institute for Ocean Sciences,
St. George's, Bermuda, 13-14 March 2019*

SUMMARY REPORT OF THE MEETING

I. Opening of the meeting

The Bermudian Deputy Premier and Minister of Home Affairs, the Hon. Walter Roban, opened the meeting by welcoming participants to Bermuda and recognizing the fifth anniversary of the signing of the Hamilton Declaration and the achievements of the Sargasso Sea Commission since that time, including doubling the number of Signatory governments. He also thanked Fisheries & Oceans Canada for their financial support of the workshop, and the Bermuda Institute of Ocean Sciences for providing the venue.

II. Welcoming remarks

Nadia Bouffard (Fisheries and Oceans Canada) also welcomed the participants and thanked the co-organizers of the meeting as well as the Government of Bermuda. Canada, as a Signatory to the Hamilton Declaration, is supportive of conservation of this unique ecosystem and looks to the future to improve stewardship.

Professor Nicholas Bates (Bermuda Institute of Ocean Sciences) welcomed the participants and gave an overview of the history of BIOS.

Dr David Freestone (Sargasso Sea Commission) expressed his thanks to the Government of Bermuda, Fisheries and Oceans Canada, and to BIOS for hosting the meeting.

Participants then had the opportunity to introduce themselves. The full list of participants and presentations can be found at

<http://www.sargassoseacommission.org/about-our-work/workshops/next-steps-to-strengthen-stewardship-of-the-sargasso-sea>.

III. The Work of the Sargasso Sea Commission

Dr David Freestone gave an overview presentation on the work of the Sargasso Sea Commission to date. He included a review of the importance of the Sargasso Sea itself and the issues of weak governance of high seas areas. The Commission's overarching goals are to promote international recognition of the Sargasso Sea, encourage scientific research, and expand existing knowledge and to develop proposals for submission to existing regional, sectoral and international organizations to promote the objectives of the

Hamilton Declaration.

Since the initial signing of the Hamilton Declaration five years ago, a total of ten government have now signed on to the effort to pursue collaboration towards conservation of the Sargasso Sea and take forward proposals for protection measures to appropriate international bodies.

Dr Freestone went on to review some of the successes and challenges the Commission has faced in its work with a number of sectors, including fishing, shipping, seabed exploitation and cables, and conservation of migratory species. Some key takeaways from the experience of the past five years are that progress works on a long time frame, there is poor communication between sectoral organizations and a general resistance to taking precautionary decisions. The project demonstrates the difficulty of working at an ecosystem level within the current high seas governance framework. The Commission will partner with DFO Canada in hosting a side event on the findings of this workshop at the BBNJ meeting in New York in April, it will co-host a third meeting of European eel range states in June 2019, and continue work on the use of the Sargasso Sea as a possible pilot project for an ecosystem approach to fisheries in the North Atlantic.

IV. The Science of the Sargasso Sea (chaired by Professor Stephen de Mora)

Professor Nick Bates (BIOS) gave a presentation on BIOS' research on global and local environmental changes. BIOS has a long history of research, with Hydrostation S and BATS. BIOS currently works on biogeochemistry, ecosystems, physical dynamic oceanography, reefs, and human health with a variety of international collaborators. They have seen many changes on the global scale, including oceans growing warmer and saltier.

Professor Howard Roe (Sargasso Sea Commission) gave an update on the 2011 baseline science case, acknowledging the excellent contributions made by BIOS researchers. His overview included the oceanographic, ecological, and biological diversity of the ecosystem as well as its economic importance and threats to it. Although our understanding of a number of issues has developed since 2011, Professor Roe concluded that the science case was still fit for purpose.

Professor Murray Roberts (University of Edinburgh) gave an overview of the ATLAS and I-Atlantic projects. The ATLAS project, which is in its final year, aimed to build a scientific evidence base to move forward and help to create policy for spatial management. The I-Atlantic Project, which will standardize Atlantic long-term observations, map deep and open-ocean ecosystems, assess tipping points of ecosystems to ocean change, and align and enhance cooperation across the Atlantic basin, is just getting started and the Sargasso Sea is one of its priority areas of concern.

Professor Pat Halpin (Duke Marine Geospatial Ecology Laboratory) gave a presentation on the Migratory Connectivity of the Ocean Corridors Project (MiCO). This project looks at the corridors/pathways across the high seas and areas under national jurisdiction, using international cooperation to build a database of shared information. This focuses on areas which connect the nodes, especially in the high seas such as the Sargasso Sea, and models the abundance/density of species both temporally and spatially. This project

plans to develop knowledge and network models which could be used as decision support tools and feed into policy recommendations. The next steps for this projects are augmenting the public role of MiCO and developing new science applications for the database.

During the Q&A session, participants asked about the drivers behind some of the widespread ocean changes. Panelists suggested that data tools with real time information can be important drivers of management policy decisions. One challenge for decision makers is the levels of uncertainty and gaps in data, and panelists were asked where they see data gaps and what levels of uncertainty. The response was that by using the best evidence possible and developing maps, policymakers can be shown areas of greatest pressure. The high seas is a data poor environment and there is a continuing need for basic science in such areas. The results of ongoing research needs to be communicated to decision makers in appropriate language.

V. Towards an Ecosystem Approach to Fisheries and Fisheries Habitat Conservation in the Sargasso Sea (chaired by Dr Tammy Warren, Sargasso Sea Commissioner)

Professor Laurie Kell and Dr Brian Luckhurst gave a joint presentation on work currently being conducted in the North Atlantic to develop an ecosystem based approach to fisheries management (EBFM). In 2015, ICCAT hosted a workshop on how to develop EBFM and recognised that the Sargasso Sea would be a good case study to help develop best practice. Professor Kell and Dr Luckhurst showed how the Drivers, Pressures, State, Impacts, and Response (DPSIR) framework used by ICCAT to develop their ecosystem report card could be extended to implement ecosystem management in the Sargasso Sea. They suggested that a key issue is to develop indicators that can monitor the state of the Sargasso Sea, the impacts of human activity, and the results of management measures in order to check that intended goals are being achieved.

Kell and Luckhurst are currently working on developing ecosystem and fisheries indicators within ICCAT. In particular to show how the Sargasso Sea can help in developing a better understanding of the impact of environmental pressures on the Atlantic and the importance of validating indicators using fisheries independent data. To do this there is a need to collaborate across disciplines and to move from a conceptual frame to a managerial tool. To help do this they are developing a process for stakeholders to have input, and they have contacted outside experts for their feedback on how the Sargasso Sea could help this process. So far, there has been very positive feedback. There seems to be support for the view that the Sargasso Sea will provide a useful case study that may be relevant to other regions as well.

Dr Sandrine Pivard (SPAW-RAC) discussed the work programme of the Cartagena Convention in the region. She outlined the functions of the Convention as a regional agreement which addresses several coastal and marine environmental threats affecting the countries of the wider Caribbean region. These issues include topics such as *Sargassum* strandings, conservation of threatened and endangered species, and pollution. They work with a variety of partners, including the Sargasso Sea Commission, in order to address these issues.

During the Q&A session, panelists were asked about the overlap between regional organizations and the Sargasso Sea, as well as how governance can be part of the solution for fisheries management. The relationship between fisheries and the ecosystem was also discussed. Panelists noted again that there are still huge data gaps, and there is a need for a comprehensive analysis of the system to identify gaps and prioritize mechanisms to gain more data.

VI. Monitoring the Marine Environment and Human Impacts in the Sargasso Sea (chaired by Mark Spalding, Sargasso Sea Commissioner)

Dr Vardis Tsontos (NASA) gave an overview of the COVERAGE project that is implemented by the NASA Jet Propulsion Lab (JPL) with the support of the Committee on Earth Observation Satellites (CEOS) drawn from international space agencies. The basic objectives of the project include developing more widespread data in support of high seas areas such as the Sargasso Sea and providing a global product which integrates data from multiple sensors. They want a system to address community needs and gather feedback from stakeholders. Phase A of the project is nearly complete and Phase B is about to begin which will include stakeholder participation from organizations including the Sargasso Sea Commission. Future satellite missions will provide larger data sets which they want user groups to be able to work with in situ rather than requiring the download of huge data sets.

Paul Woods (Global Fishing Watch) gave a presentation on the work of Global Fishing Watch, which monitors global fishing activities using AIS detection and has the ability to track vessels and detect gear type by movement behavior. Their proposal is to build transparency in large scale fisheries to allow research and analysis to drive for better policies. They publish their findings and provide them free to partner organizations.

Mr. Woods gave a demonstration of their system using the Sargasso Sea as a case study. They have, for example, observed fishing effort, calculated in hours within the Area of Collaboration. They observed 15 "loitering" events with 6 different carrier vessels, and also some cargo traffic. They are currently negotiating a new license which will allow them to observe all vessels (not just fishing vessels) and also some activity of vessels involved in seabed exploration/exploitation activities, including some just outside the Sargasso Sea Area of Collaboration boundary. They can use all these data and look for overlap or interactions with the routes of migratory species.

During the Q&A session, panelists were asked about the abilities of these observation systems to discern specific information about vessel traffic, as well as ways they could be missing information as well as how the systems could be improved. Panelists were also asked how vessel presence might be used as a proxy to infer information about the movement of fish stocks.

DAY TWO 14 MARCH

VII. Conservation of Vital Spawning Habitat in the Sargasso Sea (Chaired by Melanie Virtue, Convention on Migratory Species)

Dr Matthew Gollock (Zoological Society of London) opened the second day with a presentation on Anguillid eel conservation and its global context using the European eel as a case study. According to the International Union for the Conservation of Nature (IUCN), these eels are a flagship species for aquatic conservation and a useful indicator for the health and connectivity of freshwater and marine ecosystems. These eels have a complex life cycle, being both semelparous (having one big breeding event before dying) and panmictic (all returning from across the continental range to the same place to breed). They live and feed in continental waters (fresh and brackish) and then return to the ocean to breed – in the case of the European eel, this is believed to be the Sargasso Sea.

Many of these species have been experiencing declines in abundance due to climate change, pollution, parasites and habitat loss, particularly due to migration barriers. Unsustainable exploitation and trade (both legal and illegal) is also believed to be a significant impact on these species. Over the past 10-15 years, there have been efforts to improve the status of the critically endangered European eel. The European Union has regulations in place requiring that each country with viable eel populations develops an eel management plan. The species is also listed in Appendix II of CITES and the subsequent EU ban on exports has had the side effect of causing increase in trade from other locations and/or in other species. South East Asia, North Africa and the Americas have been particularly affected.

Professor Howard Roe (Sargasso Sea Commissioner) discussed the importance of the Sargasso Sea for *Anguillid* eels. He gave an overview of the background oceanography and atmospheric interactions that impact their migratory life cycle and reviewed recent satellite tagging results for both European and American eels. Both species spawn somewhere in the southwest Sargasso Sea, probably in the region of the seasonal sub-tropical convergence, though the exact location is unknown. He wondered whether European eels might spawn further east- using the prevailing ocean currents to carry their eggs into the convergence where their leptocephali are found. Since marine snow is a major part of the diet of the leptocephali it is likely that microplastics which accumulate in the convergence zone are also consumed by eel larvae.

Professor Chris Wold (Lewis & Clark Law School) presented an overview of the process and options for European eel conservation. CITES, IUCN Red List, OSPAR, and the Convention on Migratory Species have all noted threats to the species. CMS, in collaboration with the Sargasso Sea Commission, have hosted several workshops on the European eel. The first of these workshops, in Galway in 2016, convened range states to focus on science. The Second Range States Workshop in Malmo in 2018, agreed that existing measures for the European eel were inadequate as no group was looking at the full range of threats. In June a third meeting will be held to consider a potential agreement through CMS for European eels which will take into account all threats and seek to improve international cooperation and possible protection for its migration and spawning areas.

Brian Lester (Fisheries and Oceans Canada) discussed challenges and opportunities for conservation of American eels. He provided an overview of the distribution of eels and the issues they face, such as habitat loss. In terms of assessment, there have been some individual assessments by countries but this information needs to be brought together. Some range states do not have a good understanding of their eel stocks so there is little management and they are susceptible to illegal trade. Despite this, there are excellent opportunities for stakeholder involvement and for range states to develop an understanding of their imports/exports. He suggested that an organization (such as perhaps the Sargasso Sea Commission) could take a useful role in coordinating international efforts at management.

During the Q&A session, participants discussed the importance of the Sargasso Sea in the *Anguillid* eel's life cycle and the difficulties of tracking their migrations. Questions were also raised about historical fluctuations in the eel population, but it was noted that there has never been a comparable downward trend over decades as is being seen now. Mechanisms to protect vital migration and spawning habitat in the high seas and Sargasso Sea are being discussed.

VIII. Future Collaboration regarding Human Impacts on the Sargasso Sea (chaired by Kristina Gjerde, IUCN)

Professor Ronan Long (WMU-Sasakawa Global Ocean Institute (GOI), World Maritime University) discussed collaboration with the GOI and the World Maritime University. They have partnered with the Sargasso Sea Commission on issues related to the European eel. Future avenues of collaboration could include their ocean leadership programme, projects related to marine debris in the Eastern Caribbean, BBNJ, and research into exploration and mining in the mid-Atlantic ridge area.

Dr. Fanny Douvere (UNESCO World Heritage Centre) gave a presentation on the role of the World Heritage Convention. Under the World Heritage Convention, countries have a joint responsibility to protect sites across all nations involved. Currently, this only includes marine sites within national jurisdiction, but she argued that the Convention does not specifically exclude areas beyond national jurisdiction. A 2011 WHC Internal Audit report suggested the issue should be further explored to "future proof" the Convention and in a 2016 report, five sites including the Sargasso Sea were identified as possibly meeting the "outstanding universal value" requirements that merit World Heritage inscription.

Fred Kingston (Northwest Atlantic Fisheries Organization) presented NAFO's work and collaboration on fisheries issues, particularly its work on the development of an ecosystem based approach to fisheries management. Part of the Sargasso Sea EBSA described in 2012 by the Convention on Biological Diversity, as well as a segment of the Bermuda EEZ, is located within the NAFO Convention Area. NAFO has a mandate for international cooperation and has an established science-policy interface. Their Scientific Council has well-developed single stock assessments and has identified benthic areas of concern, including vulnerable marine ecosystems (VMEs) and seamounts for bottom fishing closures. The Scientific Council is currently working to provide ecosystem summary sheets to managers on what is happening in the food web, climate change, and ocean conditions.

During the Q&A session, participants asked about other regional fisheries organizations and the ecosystems approach within NAFO. Participants asked about what needs RFMOs have if they want to enhance cooperation. The need for better communication was highlighted although it was noted that the BBNJ discussions have helped in that area.

IX. Next Steps to Strengthen Stewardship of the Sargasso Sea (chaired by the Hon. Wilfred Moore, Sargasso Sea Commissioner)

Ambassador David Balton gave a presentation, based on the paper he authored in consultation with the Sargasso Sea Commission Secretariat, about potential ways to strengthen the Stewardship of the Sargasso Sea and how that might be organized. He noted that the Executive Secretary's presentation highlighted the fact that an arrangement such as the Sargasso Sea Commission, which is based on a non-binding declaration, may limit the degree of influence that it may have in international bodies. He suggested this is a good time to be considering these issues since global attention on the oceans is very high.

Ambassador Balton noted that the options he outlined are not necessarily the only or even the best options but that the paper was meant to spark thinking about what a new structure could look like. The paper outlined three options: a model based on the Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR), one based on the North East Atlantic OSPAR regime or a hybrid or totally new model. He then summarized each of the three options. CCAMLR conducts its own research, disseminates data, and identifies conservation needs. It has the ability to adopt conservation and management measures by consensus and has a system of observation and inspection. CCAMLR mainly manages fisheries so it is not so different from an RFMO, however it does have a broader mandate to consider the ecosystem as a whole. OSPAR is one of the most successful of the regional seas programmes and covers high seas areas. Each member state has an obligation to take all possible steps to prevent and eliminate pollution and the adverse effects of human activities. If the Hamilton Declaration Government Signatories were to consider this option, it could be a partner organization with OSPAR. OSPAR unlike CCAMLR does not deal with fisheries. The last option presented, a hybrid or new model, could include functions relating to fisheries and science as well as marine pollution, with a function for capacity building to assist developing country partners in the region in meeting their obligations.

Ambassador Balton noted that there are synergies between this process and the ongoing UN negotiations on biodiversity in areas beyond national jurisdiction (BBNJ) and that it could provide an example of a regional governance model for implementation. All three of the models presented have the common thread that the Hamilton Declaration would need to be replaced by an international agreement that re-establishes the Commission and gives it international personality and potentially more authority and influence.

Ambassador Balton then participated in a discussion led by a former Executive Secretary of OSPAR, Professor David Johnson. Johnson posed a series of questions to Ambassador Balton in order to probe further into the options and factors to consider. Ambassador Balton noted that although it may be a little early to think about another organization, it is a good time to think about what comes next. Using the Arctic as an

example, we could begin now and determine what comes from the BBNJ negotiations later. Instead of pre-empting them, governments could start moving forward now whatever the result of the BBNJ process. When asked if keeping the status quo would be a possible strategy, Ambassador Balton noted that may be a reasonable attitude, but his opinion is that the Sargasso Sea Commission as currently structured would not be able to achieve all that it would like to. It might be more effective for governments to imbue a commission with power to do things itself.

When asked if he envisaged the agreement to be binding only on parties, Ambassador Balton mentioned that he hoped that taking the next step would attract more parties to join, perhaps from countries surrounding the Atlantic basin or those whose vessels use the Sargasso Sea. Professor Johnson asked about the costs of running an organization modeled on CCAMLR or OSPAR, and Ambassador Balton thought that dividing up an annual budget of several million dollars between 10-15 developed countries would not pose a problem. When asked about the possibility of extending the NAFO boundary to the south, Ambassador Balton said that it would theoretically be possible, as would be adapting the mandate of WECAFC to take on fisheries management responsibilities for this area (a process which may already be in train). In his opinion, it would be a better option to have a sub-regional group focused on the specific issue for this portion of the Atlantic.

Professor Johnson then opened the discussion to all participants. During the Q&A session, participants discussed the merits and challenges faced by other regional organizations, and how this discussion can be complementary to the BBNJ process. Ambassador Balton noted that he would think that a BBNJ agreement would need a regional receptor in ABNJ through which to implement things. Some participants seemed partial to discussing a hybrid model which would contain the best of both CCAMLR and OSPAR, and the need to consider conservation and a fisheries competence. One participant suggested an analog with the Yellowstone National Park in the United States-as in the beginning of the project the goal was to try and conserve a relatively pristine ocean area.

Ambassador Balton suggested that members of the Commission and Signatories need to think about the substantive objectives of any new organization and whether and how it might have the ability to address the threats it aims to deal with. It was suggested that the model would need to be driven by what is to be managed. Moving forward, government representatives will need clear information to take back to their respective governments on governance gaps that the new structure might address, and how increased activity in the area might mean increased threats. They would need data in order to substantiate their case.

X. Next Steps for the Sargasso Sea: Where Do We Go From Here? (Facilitated by Dr David Freestone.)

After the Q&A session, participants separated into five smaller breakout groups to continue discussions, aided by guiding questions which were developed by the workshop organizers.

Group One, moderated by Frederico Cardigos (Sargasso Sea Commissioner) and

reported on by Ronan Long, discussed three categories of risks: global, regional, and those related to ineffective governance. They saw potential governance as mustering a coalition of the willing, for example active fisheries management related to fish species not of commercial value. States need to coordinate at an international level. Pressing science needs include maintaining the BATS time series, increased data, and addressing scientific gaps and impacts analysis, by working more strongly with science partners. There should be a focus on a specific set of species and trophic interactions. These activities should be addressed through appropriate intergovernmental organizations, and there must be an effort made to show that conservation benefits countries in the region. They agreed that the Hamilton Declaration should be strengthened, especially related to ocean literacy. Next steps include identifying existing data sources and gaps, and investigating regional needs. Perhaps this will become a regional treaty but Group One recommended waiting to see the result of the BBNJ negotiations. Their final point was to stress that there is a pressing requirement for additional resources for a needs analysis before institutional changes.

Group Two, moderated by Mark Spalding, noted that the ecological importance of the Sargasso Sea has been estimated and reviewed. It would be useful to have a comprehensive synthesis assessment of threats from human activities that draws upon the Signatories as stakeholders. They agreed that a socioeconomic study would be something to include. It might be helpful to have mapping showing where areas of interest in the Sargasso Sea are, such as seamounts, cables, and known shipping routes. They brought up the idea that having a more formal institutional framework might attract more funding. A threats case might help make the case for a greater level of institutional development. Group Two also noted the benefit of a broad mandate with a generalistic/holistic approach. They discussed an emphasis on protecting something that has been agreed to be of ecological importance. This is a place which has been recognized as meriting protection, not simply regulation. Start with a premise of what activities you want to promote rather than restrict. The strengthened Commission could support funding applications from scientists and provide a frame of reference as a respected body.

Group Three, which was moderated by Howard Roe and reported on by Kristina Gjerde, noted pressing science needs include research on plastics, changes in *Sargassum* distribution and abundance inside the Sargasso Sea as well as a possible new subspecies appearing in invasive qualities outside the Sargasso Sea, ship traffic, climate change, and fishing impacts. To address these issues, the Commission could act as a clearinghouse for existing scientific information as well as stimulate the collection of new data. It is important to have a clear understanding of who is doing what research already, set data protocols, and gather research on iconic species and ocean change. They recommended promoting technological tools to be able to respond to a dynamic changing environment. The UN Decade of Ocean Science provides a useful opportunity to garner attention for the open ocean. A clearinghouse could gather, collect, and process information and use ongoing research. In terms of institutional development, Group Three remarked that there are pros and cons to a binding agreement, and there were some signatories who expressed concerns about continuing on in a state-led initiative. The Arctic Council provides another possible model as an established voluntary commitment of governments supporting science working groups, which could potentially provide an interim solution.

Group Four, moderated by Billy Causey and reported on by Murray Roberts, thought that the work programme should include climate change, long-term modeling and global

awareness of time series, ecosystem changes, plastics from land based sources, overfishing, and *Sargassum* habitat status. Science needs identified for the research community include data on distributions of eel larvae, good ecological baselines, understanding of migratory routes and deep sea ecology. The group emphasized species which have an important role in the ecosystem. There needs to be a clear identification of threats and then a process to find opportunities to address them with partners. Information systems include management of press and media, public engagement, and outreach. There could be bespoke nodes to work within existing management systems, and a role for managing information and knowledge and targeting it towards a media audience. Group Four agreed on a strengthened role for the Hamilton Declaration which would have the power to set and develop policies, but needed clarity on what strength could mean, whether that could be increased signatories or state-led operation. There needs to be a clear statement of roles and responsibilities of Commissioners.

Group Five, moderated by Tammy Warren and reported on by Robbie Smith, noted the risks of a lack of information sharing and coordinated communications. They saw that the future role of the Commission would be to coordinate and establish priorities. They recommended looking at what can be achieved in the long term and establishing priorities, through a pragmatic perspective which prioritizes science needs. Science needs could include oceanographic time series and species reproduction (spatially and temporally). A flagship species, or a list of charismatic species in the Sargasso Sea can act to draw people's attention. They suggested a broad vision and a need to clearly state what our goals are and a pathway to achieve these outcomes once they are identified, including collaboration with partners. Information management as a chore may not be worth the effort, but there should be targeted reports which are shared with stakeholders, and have the ability to lead to data-based decisions. Group Five also agreed with a strengthened role for the Hamilton Declaration. To achieve this there must be a broad view of various processes and lessons learned from successes in other areas. The Commission would continue to work as coordinators to collaborate towards outcomes or consensus.

XI. Closing of the Meeting

In closing the meeting, Dr. Freestone thanked the breakout groups – their moderators and rapporteurs. He thanked the Government of Bermuda, DFO Canada and BIOS for their support for the meeting. He also thanked all the speakers and all the participants for their active role in what he thought had been extremely interesting, exciting and important meeting in the evolution of the work programme of the Sargasso Sea Commission.