

Nineteenth Meeting of the United Nations Open-Ended Informal Consultative Process on Oceans and the Law of the Sea: 18-22 June 2018

The nineteenth meeting of the UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea (ICP-19) convened from 18-22 June 2018 at UN Headquarters in New York. The meeting brought together representatives from governments, intergovernmental organizations, non-governmental organizations, and academic institutions to examine this year's topic: "Anthropogenic underwater noise."

On Monday and Thursday, there was a general exchange of views. On Monday afternoon and Tuesday, delegates heard panel presentations and engaged in discussions on the first segment, "Sources and environmental and socioeconomic aspects of anthropogenic underwater noise." From Tuesday afternoon through Wednesday, delegates engaged with the second segment, "Cooperation and coordination in addressing anthropogenic underwater noise."

On Thursday, delegates convened in plenary to discuss: inter-agency cooperation and coordination; the process for the selection of topics and panelists so as to facilitate the work of the UN General Assembly (UNGA); and issues that could benefit from attention in the future work of the UNGA on oceans and the law of the sea. On Friday morning, Co-Chairs Kornelios Korneliou (Cyprus) and Penelope Althea Beckles (Trinidad and Tobago) distributed a Co-Chairs' summary of discussions, which delegates approved after having the opportunity to suggest changes and corrections. Key issues covered during the meeting included discussions on:

- the pervasive and complex nature of anthropogenic underwater noise;
- gaps in knowledge and lack of data on sources and impacts of anthropogenic underwater noise;
- recognizing socioeconomic impacts of anthropogenic underwater noise on sectors such as tourism, fishing, and transportation;
- potential management approaches, including area-based management tools and environmental impact assessments; and
- characterizing anthropogenic underwater noise as a form of transboundary pollution to be mitigated and addressed through an UNGA resolution.

A Brief History of the Law of the Sea and the ICP

On 1 November 1967, Malta's Ambassador to the UN, Arvid Pardo, asked the nations of the world to recognize a looming conflict that could devastate the oceans. In a speech to the UN

General Assembly, he called for "an effective international regime over the seabed and the ocean floor beyond a clearly defined national jurisdiction." The speech set in motion a process that spanned 15 years and saw: the creation of the UN Seabed Committee; the signing of a treaty banning the emplacement of nuclear weapons on the seabed; the adoption of a UNGA declaration that all resources of the seabed beyond the limits of national jurisdiction are the "common heritage of mankind"; and the convening of the Stockholm Conference on the Human Environment. These were some of the factors that led to the Third UN Conference on the Law of the Sea during which UN Convention on the Law of the Sea (UNCLOS) was adopted.

UNCLOS: Opened for signature on 10 December 1982 in Montego Bay, Jamaica, at the Third UN Conference on the Law of the Sea, UNCLOS sets forth the rights and obligations of states regarding the use of the oceans, their resources, and the protection of the marine and coastal environment. UNCLOS entered into force on 16 November 1994, and is supplemented by the 1994 Deep Seabed Mining Agreement and the 1995 Agreement for

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the Implementation of the Provisions of UNCLOS relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks.

UNGA Resolution 54/33: In November 1999, the UNGA adopted resolution 54/33 on the results of the review undertaken by the UN Commission on Sustainable Development at its seventh session on the theme of “Oceans and Seas.” In this resolution, the UNGA:

- established an Open-ended Informal Consultative Process to facilitate the annual review of developments in ocean affairs;
- decided that the Consultative Process would meet in New York and consider the Secretary-General’s annual report on oceans and the law of the sea, and suggest particular issues to be considered by the UNGA, with an emphasis on identifying areas where intergovernmental and inter-agency coordination and cooperation should be enhanced; and
- established the framework within which ICP meetings would be organized.

The first three ICP meetings identified issues to be suggested and elements to be proposed to the UNGA, and highlighted issues that could benefit from attention in its future work. The outcome of each ICP meeting has been a Co-Chairs’ summary.

ICP-1 (30 May - 2 June 2000) focused on fisheries and impacts of marine pollution and degradation.

ICP-2 (May 2001) addressed marine science and technology, and coordination and cooperation in combating piracy and armed robbery at sea.

ICP-3 (April 2002) considered the protection and preservation of the marine environment, capacity building, regional cooperation and coordination, and integrated oceans management.

UNGA Resolution 57/141: In December 2002, the 57th session of the UNGA adopted resolution 57/141 on “Oceans and the law of the sea,” which welcomed the ICP’s previous work, extended it for an additional three years, and decided to review the ICP’s effectiveness and utility at its 60th session.

ICP-4 (June 2003) adopted recommendations on safety of navigation, the protection of vulnerable marine ecosystems, and cooperation and coordination on ocean issues.

ICP-5 (June 2004) adopted recommendations on new sustainable uses of oceans, including the conservation and management of the biological diversity of the seabed in areas beyond national jurisdiction.

ICP-6 (June 2005) adopted recommendations on fisheries and their contribution to sustainable development, and considered the issue of marine debris.

UNGA Resolution 60/30: In November 2005, the 60th session of the UNGA (resolution 60/30) continued with the Consultative Process for another three years, with a further review of its effectiveness and utility by the Assembly at its 63rd session.

ICP-7 (June 2006) enhanced understanding of ecosystem-based management and adopted recommendations on ecosystem approaches and oceans.

ICP-8 (June 2007) discussed issues related to marine genetic resources. Delegates were unable to agree on key language referring to the relevant legal regime for marine genetic resources in areas beyond national jurisdiction, and as a result no recommendations were adopted and a Co-Chairs’ summary report was forwarded to the UNGA for consideration.

ICP-9 (June 2008) adopted recommendations on the necessity of maritime security and safety in promoting the economic, social, and environmental pillars of sustainable development.

UNGA Resolution 63/111: In December 2008, the 63rd session of the UNGA (resolution 63/111) agreed that the Consultative Process would be renewed for two more years, and decided that the Consultative Process at its tenth meeting will focus on implementation of outcomes of the Consultative Process, including a review of its achievements and shortcomings in its first nine meetings.

ICP-10 (June 2009) produced a Co-Chairs’ summary report collating outcomes of its discussions on the implementation of the ICP outcomes, including a review of achievements and shortcomings in its first nine years, which was forwarded to the UNGA for consideration.

ICP-11 (June 2010) produced a Co-Chairs’ summary of discussions, including on the theme of capacity building for marine science.

UNGA Resolution 65/37: In December 2010, the 65th session of the UNGA (resolution 65/37) on continued the Consultative Process for two more years.

ICP-12 (June 2011) addressed, *inter alia*: progress to date and remaining gaps in the implementation of oceans- and seas-related outcomes of the major summits on sustainable development; new and emerging challenges for the sustainable development and use of oceans and seas; and the road to the UN Conference on Sustainable Development (UNCSD, or Rio+20) and beyond.

ICP-13 (29 May - 1 June 2012) considered the theme of marine renewable energies.

UNGA Resolution 67/78: In December 2012, the 67th session of the UNGA (resolution 67/78) continued the Consultative Process for two more years.

ICP-14 (June 2013) addressed ocean acidification.

ICP-15 (May 2014) focused on the role of seafood in global food security.

UNGA Resolution 69/245: In December 2014, the 69th session of the UNGA (resolution 69/245) continued the Consultative Process for two more years, with a further review of its effectiveness and utility by the UNGA at its 71st session in 2016.

ICP-16 (April 2015) convened under the theme of oceans and sustainable development. Topics included: the environmental, social and economic dimensions of oceans as well as activities, initiatives, progress, opportunities and challenges related to integrating the three dimensions.

ICP-17 (June 2016) convened under the theme marine debris, plastics, and microplastics.

UNGA Resolution 71/257: In December 2016, the 71st session of the UNGA (resolution 71/257) continued the Consultative Process for two more years, with a further review of its effectiveness and utility by the UNGA at its 73rd session.

ICP-18 (May 2017) convened under the theme of oceans and climate change as it relates to existing mechanisms, scientific approaches, and conventions.

ICP-19 Report

Co-Chair Kornelios Korneliou opened the meeting on Monday morning. Miguel de Serpa Soares, UN Under-Secretary-General for Legal Affairs and UN Legal Counsel, said the theme of ICP-19, “Anthropogenic underwater noise” will support coordination of achievements under Sustainable Development Goal (SDG) 14 to “conserve and sustainably use the oceans, seas and marine resources for sustainable development.”

Elliott Harris, Assistant Secretary-General for Economic and Social Affairs (UN DESA), reported that Ambassador Peter Thomson, UN Special Envoy for the Ocean, with support from UN DESA, is carrying out activities that relate to the ICP-19 theme on nine Communities of Ocean Action, including on marine and coastal ecosystem management and marine pollution.

Korneliou recognized the contributions of previous Co-Chair Gustavo Meza-Cuadra (Peru) and welcomed Co-Chair Penelope Althea Beckles (Trinidad and Tobago). Beckles introduced the Secretary-General's Report, "Oceans and the Law of the Sea" (A/73/68), and presented the format and annotated provisional agenda (A/AC.259/L.19), which was adopted. She also noted that the current status of the voluntary trust fund limited the ability to provide assistance to participants from least developed countries (LDCs), small island developing states (SIDS) and landlocked developing countries (LLDCs).

Speaking on behalf of the Vice-President of the UN General Assembly, Omar Hilale, Permanent Representative of Morocco to the UN, said the movement of just one fish from the sea to our dinner tables involves actions across many ocean areas. He highlighted the need to bridge data gaps in marine science, and increase advocacy and outreach, and noted ICP's role for staying on top of pressing oceans issues.

General Exchange of Views

On Monday and Thursday mornings, delegates delivered general statements on the topic of underwater marine noise. Egypt, on behalf of the Group of 77 and China, emphasized conducting comprehensive baseline studies combined with long-term monitoring programmes to track future changes in acoustic noise levels; noted the value of the International Maritime Organization (IMO) guidelines for the reduction of underwater noise from commercial shipping, and the Convention on Biological Diversity (CBD) Expert Workshop on Underwater Noise; and called on states with the ability to do so to make additional contributions to the voluntary trust fund.

The Gambia, on behalf of the African Group, highlighted: the urgent need for further research to address uncertainties regarding underwater noise and socioeconomic impacts on Africa and its people, including food security; and the need to consider cumulative impacts.

A number of delegates underscored the importance of capacity building, including, *inter alia*: The Gambia, on behalf of the African Group; Trinidad and Tobago; Singapore; Tonga; and Jamaica. They emphasized capacity needs related to measuring underwater noise, identifying indicator species, and assessing impacts. Nepal said SIDS and LDCs should be prioritized for capacity building, with some adding LLDCs. The International Whaling Commission (IWC) also recommended incentivizing approaches that minimize impacts and generate economic benefits.

The European Union (EU) highlighted steps taken to manage impacts of underwater noise, including formation of a technical group, which developed guidance and a register of loud and impulsive noises.

Peru called for recognition of ocean noise as a form of marine pollution, which is broadly addressed under SDG 14 on life below water. Mauritius noted that underwater marine noise is not referenced specifically as a source of marine pollution under UNCLOS and also called for noise-reduction guidelines.

Trinidad and Tobago referred to measures in her country, including the State of Environment Report and consideration of provisions to regulate noise under the national environment policy.

Nepal said the long-term effect of underwater noise on tourism and aquaculture needs to be addressed.

Cyprus cited marine mammal surveys conducted in 2016 and 2017 to assess effects of underwater noise, and reported recommendations for measures to reduce impacts from seismic surveys.

New Zealand drew attention to the importance of marine biota on indigenous communities, saying her country has had a code of conduct since 2012 for minimizing acoustic disturbances to marine mammals from seismic survey operations.

India supported area-based approaches to protecting marine biota from effects of noise, and highlighted current efforts in her country to classify noise through a recently-patented underwater noise-recording system with real-time transmission capacity.

Japan emphasized the need for ICP-19 to identify research gaps to guide future assessments.

Canada discussed the work of the Enhancing Cetacean Habitat and Observation (ECHO) Program to identify technical ways to make vessels quieter, and the EcoAction programme, which provides incentives for cargo and cruise vessels intended to quiet waters around the Port of Vancouver for at-risk marine life.

Malaysia stressed impacts on marine mammals, highlighting dugongs' endangered-species status and their high exposure to noise from boat activities since they feed in shallow waters. He emphasized: the need for a comprehensive acoustic baseline study to obtain accurate, realistic, and current information, including on migratory routes; enhanced enforcement through real-time monitoring of excessive noise; mapping economically and ecologically important species; and the value of marine parks.

Australia highlighted its efforts to develop and implement best management practices and practical standards to minimize risk associated with actions such as seismic activity. She expressed support for the Convention on the Conservation of Migratory Species of Wild Animals Family Guidelines on Environmental Impact Assessments for Marine Noise-generating Activities (CMS Family Guidelines).

Noting that not all sound introduced by humans is deleterious and that different sounds have different effects or no effect at all, the US outlined research projects on, *inter alia*: measuring ambient sound levels; technologies to detect presence of marine life; use of acoustic tags; and efforts to develop an ocean noise strategy to guide management decisions over the next decade.

Mexico stressed that marine mammals depend on sound for intra-species communication, prey detection, predator-avoidance, and mating. He described physiological impacts of underwater marine noise, including changes to migratory routes and broader ecosystem impacts, and suggested options such as delimiting specific routes for shipping.

Tonga emphasized her country's reliance on ocean-generating revenues, including transportation of goods across more than 100 islands. She said tourists come to see and swim with humpback whales, which travel over 5000 kilometers to court, mate, give birth, and nurse in Tonga's waters, and said marine life can be adversely affected by noise in areas outside Tonga's exclusive economic zone (EEZ). She also noted that the Secretary-General's Report does not include all activities in all oceans and encouraged a more inclusive approach.

Argentina noted the lack of common international standards to measure the impacts of anthropogenic underwater noise and ways to mitigate the impacts, and also supported the use of the IMO guidelines to reduce marine noise, including potential changes to ship design.

The Dominican Republic addressed the issue of marine noise in relation to tourism activities in SIDS and the need for scientific research to minimize impacts.

CMS highlighted implications of anthropogenic underwater noise to food security and livelihoods globally. He noted challenges in relation to the transboundary nature of underwater noise and highlighted the CMS Family Guidelines, which explain the mechanisms of underwater noise and impacts on marine life and different types of species.

The High Seas Alliance, speaking on behalf of the Interamerican Association for Environmental Defense, International Fund for Animal Welfare (IFAW), and others, reiterated the value of negotiations related to the conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction (BBNJ) in addressing the issue, and highlighted the need for reducing noise at the source.

OceanCare advocated for the precautionary approach in light of the serious implications of anthropogenic underwater noise on livelihoods and food security.

IMO highlighted its work on minimizing underwater noise within the maritime sector, such as routing measures, identification of Particularly Sensitive Sea Areas (PSSAs), greenhouse gas strategies, and bio-fauna guidelines.

Sources and environmental and socioeconomic aspects of anthropogenic underwater noise

Discussion Panel 1: On Monday afternoon, Co-Chair Beckles introduced the first panel session. Presentations focused on characteristics of underwater sound and differences by source, such as submarine cables, shipping, offshore energy development, and sonar mapping.

Christopher Clark, Cornell University, presented a scientific overview of sound and its propagation underwater. He noted that predicting how sound travels is a function of depth and other factors and that low frequency sounds, such as those of blue whale songs, travel further. He reported that noises from ships mask sounds from marine mammals, disrupting their ability to communicate and locate food. Clark emphasized that while technology to study sound is available, the biggest uncertainty is the long-term effect of noise on marine biota.

On underwater sounds from submarine cable and pipeline operations, Richard Hale, EGS Survey Group, emphasized that the thousands of kilometers of underwater cables are vital to global economic growth. While acknowledging that noise from cable and pipeline operations or installations exists, he said the impacts are much lower than noise from commercial ships or seismic surveys. He also noted that the higher-frequency instruments used in surveys are above the hearing range of most marine mammals. He concluded that unlike other commercial operations, noise from cable and pipeline operations are not cumulative because after installation, the area remains undisturbed for decades, and cables remain silent.

Lee Kindberg, Maersk Line, presented on shipping as a source of anthropogenic underwater sound. Noting the impact of shipping on the lives of billions of people, she said 90% of internationally traded goods are transported by sea. She

highlighted measures taken by Maersk Line to increase energy efficiency, decrease vessel trips, and lower carbon emissions. She said the process of making their fleet more energy efficient has resulted in reducing underwater noise, and described “radical retrofits” of vessels, such as environmental technologies, bulbous bows, new propellers, engine de-rating, and fuel flow meters. She emphasized the need for standardization of sound measurements, and taking into consideration safe maneuvering costs, greenhouse gas emissions, marine mammals, and other factors in reducing underwater noise.

Jill Lewandowski, United States Department of the Interior, presented on sources of sound from offshore energy development. On oil, gas, and wind, she reviewed different noise-producing activities, including exploration and site assessment, construction, production and operation, and decommissioning of facilities. She compared the hearing ranges of fish and invertebrates, turtles, and cetaceans to the noise ranges of explosives, air guns, and pile driving, noting the severe impact of activities on marine mammals. Lewandowski highlighted impacts of offshore structures such as fixed platforms, compliant towers, tension leg platforms and mini-tension leg platforms, and the resulting impact of their decommissioning and removal. On ways to mitigate impacts, Lewandowski identified avoidance, minimization, and monitoring and reporting strategies. Avoidance measures included: time or area closures to protect specific species or important habitat; vessel strikes avoidance; marine debris prohibition; trawling to relocate sea turtles from an area; use of quieting technologies; and use of lowest practicable sound sources.

Presenting on sonar imaging and ocean mapping, Larry Mayer, University of New Hampshire, said recent advances that shift from use of single-beam to multi-beam sonar have opened up a “world of opportunities” for a range of applications, including: research; passage of deep currents; national security implications; pipeline and cable placements; safety; maritime heritage; and identifying potential marine protected areas (MPAs) and important fishery habitats. Mayer explained that multi-beam sonar produces a long thin fan of sound with a very short pulse. He described testing of a 12 kHz multi-beam sonar system for mapping the sea floor in an area used by Cuvier’s beaked whales. He said that, compared to previous surveys that indicated behavioral changes by the whales during US Navy activities, the multi-beam sonar appeared to have no significant impact on whale foraging behavior, but cautioned that the results applied to this particular sonar, operated this way, on foraging behavior for this community of whales.

Participants then engaged with the panelists. On sound reduction from enhancing energy efficiency of ships, Japan asked whether newer ships are more efficient and thus more silent, while IWC asked if slower ships produce less noise. Panelists said there is no general rule since ships differ on efficiency levels. France drew attention to the links between energy efficiency and reduction of carbon emissions, and Lewandowski noted that a reduction in carbon footprint by 47% since 2007 is a win-win for cost reduction and noise impacts. Argentina said recommendations to reduce noise from research vessels should also be taken into account.

The Natural Resources Defense Council (NRDC) raised the role governments can play in supporting noise reduction. Panelists pointed out that governments can support selection of vulnerable sites for protection and encourage standardization of survey

methodology. Canada suggested overlapping maps of ecologically sensitive areas with sources of underwater noise in order to assess impacts.

Several delegates called for more research on lower trophic levels that would include commercially important fish stocks. OceanCare said evidence from over 30 species of marine mammals indicates negative impacts of noise on marine life and said the issue should be explored further. Panelists noted greater awareness on impacts of noise on marine mammals and observed that studies on fish and invertebrates are emerging.

The Wildlife Conservation Society (WCS) highlighted its work conducted in partnership with the Government of Madagascar on the 2008 mass stranding of melon-headed whales. Panelists discussed aspects of the stranding, including causes, panel review, findings, and an upcoming publication related to the incident.

Discussion Panel 2: On Tuesday morning, presentations focused on the impacts of anthropogenic underwater noise on marine life and ecosystems.

Rudy Kloser, Commonwealth Scientific and Industrial Research Organisation, Australia, presented a general overview of impacts on diverse marine animals from zooplankton to whales. He reported a range of effects including mortality, tissue injury, behavioral changes, and masking of biologically important sounds. Kloser concluded that even though there are significant gaps in knowledge, there is a need for appropriate governance and management practices that provide a balance between the burden of proof and precaution.

Lindy Weilgart, OceanCare and Dalhousie University, presenting on the impact of noise on marine animals and ecosystems, said most marine animals rely on sound-based communication for vital functions. She highlighted evidence of noise impacts on over 130 marine species, saying, "We have many gaps, but we know enough to act." She emphasized the cascading effects of noise on ecosystem and ecological services, saying that noise is a significant pollutant and "we should not wait for more science to apply available technological quieting solutions."

During the subsequent discussion, Peru asked about the level of knowledge regarding effects on predator-prey interactions. Weilgart said it is difficult to be precise or predict effects on trophic levels, emphasizing the unsustainable approach of allowing the ocean to continue to suffer in order to gain from it. The Central Dredging Association (CEDA) said there is no proof that masking whale communication is harmful, with panelists responding that long-distance communication of whales is vital to their reproduction.

Jonathan Vallarta, JASCO Applied Sciences and Iberoamericana University, presented on the underwater acoustic soundscape of Paradise Reef, Cozumel. The reef area is a popular dive site used by cruise ships and small boats, which also supports the endemic and endangered splendid toadfish. Vallarta reported that: acoustic studies showed that ship and boat sound frequencies overlap with and mask the short-duration, low frequency calls of toadfish, with most impact coming from small boats. He highlighted potential mitigation actions: establishing MPAs; creating financial incentives, including for quieter ships, navigation routes outside reef areas, and speed reduction; and ocean users and resource managers working cooperatively to design new policies.

Adrián Madirolas, National Institute of Fisheries Research and Development, Argentina presented a review on the impacts of anthropogenic underwater noise on fish. He highlighted key impacts, citing the role of fish in the marine ecosystem and its value as a food source. Madirolas explained that fish perceive sound in response to pressure waves and particle motion. Sound from ships and other anthropogenic sources, he said, can alter fish behavior, causing them to move away from the source, resuming normal behavior once the sound ceases. Madirolas noted that sound stimuli also can have long-term impacts at a population scale by altering feeding, reproduction, natural conduct, and causing some physiological changes. On measures to minimize impacts, he noted the International Council for the Exploration of the Sea (ICES) 209 Standard, which limits structure-borne noise levels for all onboard equipment.

Peter Tyack, University of St. Andrews, presented on environmental aspects of anthropogenic underwater noise, including cumulative impacts on different marine species and ecosystems. He compared definitions of "cumulative impacts" given by policymakers and biologists, noting that policymakers defined it as incremental impact of a proposed human action when added to other actions, whereas biologists said it was an accumulation due to exposure of animals to the same or different stressors. Using the example of marine mammals, he outlined the ecological interaction of the food web and threats, such as predators, parasites and diseases, prey, toxins, disturbance, bycatch, ocean climate, and anthropogenic noise. Tyack said the interactions between stressors have a cumulative impact that cannot be predicted due to the complexities in determining the occurrence and severity of each stressor. He emphasized focusing on a suite of stressors affecting the animal and determining which can be targeted to reduce the overall impact. He added that shifting baseline conditions can prevent effectively addressing a single stressor.

In the ensuing discussion, delegates and non-governmental organizations (NGOs) touched on, *inter alia*: the impact of anthropogenic underwater noise and ocean climate change on fish; co-benefits of noise reduction associated with greenhouse gas reductions; ocean acidification and amplification of sound travel; and existing mechanisms that address impacts on fisheries such as the UN Fish Stocks Agreement.

Several delegates discussed actions required by stakeholders and governments. Mauritius said scientists should make convincing arguments to urge government action on noise reduction. Weilgart said dealing with noise pollution is much easier than other forms of pollution since once removed from the water, it does not persist. NRDC emphasized the need for better coordination of actions and capacity building.

Tonga asked about noise-generating activities of coastal communities. Weilgart noted that two-stroke engines, commonly used in boats, have more noise impact than four-stroke engines and that terrestrial runoff makes reefs less resilient to noise.

France urged ensuring that exploratory research projects, such as geological and seismic surveys, are not undermined as they provide vital information for disaster preparedness. Weilgart said these surveys can use higher sound frequencies to reduce impacts, emphasizing that technological innovations to ensure that research activities are more silent should also be applied.

Discussion Panel 3: On Tuesday afternoon, delegates heard presentations on work under the CBD, socioeconomic and cumulative impacts, and the role of science related to domestic policy-making.

Joseph Appiott, CBD Secretariat, discussed the CBD's work on understanding, minimizing, and mitigating the impacts of underwater noise. He noted the first mention of this issue was at the tenth Conference of the Parties (COP 10), where parties acknowledged its importance and requested a synthesis of information. At COP 11, he said, parties called for a further elaboration of the issue through a workshop, which was held in 2014 to consider different impacts on a variety of fauna. He reported the uptake of the workshop's report and the resulting decision at COP 12, which encouraged parties to take appropriate measures to mitigate the impacts of underwater noise. He urged delegates to consider inclusion of underwater noise as part of the post-2020 global framework for biodiversity to be adopted in 2020 at COP 15.

Nicolas Entrup, OceanCare, noted increased awareness over the last decade of impacts on livelihoods and food security. He described studies on bluefin tuna, cod and haddock, oysters, and microscopic zooplankton, pointing to the synergistic and cumulative impacts of anthropogenic underwater noise. Entrup highlighted connections to the SDGs on poverty eradication, food security, and climate change, noting that fossil fuel exploration is a significant source of ocean noise. He called for developing guidance for decisionmakers, saying, "absence of evidence is not evidence of absence" and urged acting now, in a precautionary way.

Andrew Carroll, Geoscience Australia, presented on the role of science in domestic policy-making on anthropogenic underwater noise, highlighting case studies from Australia. He focused on domestic regulation of underwater noise from marine seismic surveys and described lessons learned from the Lord Howe Rise Deep Seismic Survey and Gippsland Marine Environmental Monitoring Project, which used the Passive Acoustic Monitoring approach. He also outlined work with Curtin University using acoustic data to help assess behavioral responses of sperm whales to seismic noise and increase understanding of the distribution and abundance of whales in the region. On policy application of scientific research, he emphasized identifying appropriate metrics, standardized methods, managing perceptions of bias, and finding the balance between restrictive regulations and loss of resource benefit. He reiterated the value of interdisciplinary teams of scientists, industry representatives, and regulators to frame scientific results and interpretations in socioeconomic and legislative contexts.

In the ensuing discussions, CEDA noted the lack of evidence on sensitivity of large whales to underwater noise. OceanCare said there is a clear role for the Food and Agriculture Organization of the UN (FAO) in further research. Brazil reiterated the need for standardized methodology. India queried the impacts of passive acoustic monitoring systems, to which Carroll referenced acoustic propagation modelling as a mitigation measure. The United Kingdom highlighted evidence of impact of seismic surveys to humpback whales. Capacity building, as it relates to the CBD and existing conventions and mechanisms, was also discussed.

Cooperation and coordination in addressing anthropogenic underwater noise

Discussion Panel 1: On Tuesday afternoon, ICP-19 took up the topic of cooperation and coordination, with presentations on the CMS and IMO guidelines, and the IWC's approach to anthropogenic underwater noise.

Heidrun Frisch-Nwakanma, CMS, presented on the CMS Family Guidelines. Observing that understanding of noise impacts is improving, she said applying such knowledge remains challenging, and that governments need a basis for assessing impacts of proposed projects. She said almost no existing national and regional level guidelines consider what should be included in environmental impact assessments (EIAs), so results often suffer from lack of information about the source of data, and subsequent decisions are premised on erroneous or inadequate information. She reviewed the contents and structure of the CMS Family Guidelines, and noted the potential for adding reference to this through an UNGA resolution to ensure the global community is aware of this tool.

Stefan Micallef and Frederik Haag, IMO, presented jointly on the work of their organization since the 1980s in relation to underwater noise. Micallef elaborated on events and activities leading up to the Code on noise levels on board ships, which entered into force in 2014. He said this mandatory code, which requires vessels to reduce noise in their operations to protect the health of seafarers, also has positive repercussions for marine fauna. Haag also reported on the non-mandatory instrument, Guidelines for the Reduction of Underwater Noise from Commercial Shipping to Address Adverse Impacts on Marine Life. He said it was developed in recognition that underwater noise from shipping is an issue requiring mitigation through improved ship design and operations. Haag also drew attention to IMO's PSSAs, under the London Convention and Protocol, which is an area-based management tool.

Rebecca Lent, IWC, presented on impacts of underwater noise on cetaceans and IWC's global approach. She highlighted her organization's history and measures under the Convention, including catch limits by species and area, designating specified areas as whale sanctuaries, protection of calves and females accompanied by calves, and restrictions on hunting methods. She also highlighted the role of the IWC Scientific Committee and its recommendations for measures to reduce underwater noise impacts at the individual and population level through improved monitoring, data collection, and research. She described the work of the IWC Conservation Committee on environmental and conservation issues, including impacts of underwater noise on cetaceans.

During the subsequent discussion, Japan raised the need to address noise from ships, with IMO responding that more research is needed before targets of sound levels can be set. Brazil highlighted her country's efforts in pursuing sanctuary areas for whales and for hosting the next IWC meeting.

Additional topics discussed included:

- clarification on international guidelines for other noise sources and the benefits of cooperation among agencies;
- importance of agencies working together to avoid duplication of work and maximization of resources;
- the work of the International Offshore Petroleum Environmental Regulators, which also addresses marine noise; and

- the need to highlight the work done by different conventions and agencies on marine noise to capture collective efforts.

IMO discussed the Energy Efficiency Design Index and its co-benefits with the reduction of noise and greenhouse gas emissions. New Zealand sought clarification on the inclusion of regional fisheries management organizations, with IWC responding that regional organizations are included in its work.

Discussion Panel 2: Presentations on cooperation and coordination continued on Wednesday morning, with examples from the EU, the North-East Atlantic, Jamaica, the Argentine Sea, and Canada.

René Dekeling, Co-Chair, European Commission (EC) Technical Group on Underwater Noise (TG-NOISE), presented on cooperation and implementation of the EU Marine Strategy Framework Directive (MSFD). The MSFD, he said, sets a framework for achieving Good Environmental Status (GES), using an ecosystem-based approach to activities that impact the marine environment. He highlighted: the GES descriptor requiring that the introduction of energy, including underwater noise, does not adversely affect the ecosystem; a pollution definition that includes “human-induced marine underwater noise”; and the requirement for regional cooperation in assessment and target setting. On EU-wide cooperation, he noted: a 2010 European Commission decision on energy, setting measurement of noise as a priority; and definitions of two indicators related to short-duration impulsive noise and long-lasting continuous noise. Dekeling also summarized TG-NOISE advice, including on the most relevant impulsive noise effects and monitoring guidance. On recent progress, he cited agreement on a common approach and monitoring/registration programmes, but also noted the lack of relevant historical data. On future work, he noted the lack of scientific baselines as an obstacle to setting internationally-agreed noise thresholds and the need to think ahead about management strategies if a threshold is determined to be at risk of exceedance.

Nathan Merchant, Centre for the Environment, Fisheries and Aquaculture, UK, presented on regional approaches by the Commission for the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR). He reported that the Commission addresses underwater noise in the work of the Intersessional Correspondence Group on Underwater Noise (ICG-NOISE), which was established in 2014. Merchant said the Commission is developing a common indicator and two candidate indicators to be used in monitoring, assessment, and management of underwater noise pollution. On impulsive noise, he highlighted elements of OSPAR’s Impulsive Noise Registry, which provides an overview of reported impulsive noise in the region using data from industry operators. He explained that data on sound pressure, underwater noise, and the state of ecosystem components related to targeted species are combined to assess and measure impact and risk by species. He reported that OSPAR is also working on continuous noise issues and has produced an inventory of noise mitigation techniques. He said the work may facilitate the setting of targets for impulsive noise activity, in alignment with the requirement to set noise thresholds under the EU MSFD.

Loureene Jones, National Environment and Planning Agency, Jamaica, presented on her country’s cooperation and coordination in addressing anthropogenic underwater noise. She said Jamaica is an archipelagic state, containing 66 rocks, cays and islands, with responsibility for an ocean jurisdiction 24 times the size of its land area. As a coastal-based population, Jones said over 75%

of residents live within 10 kilometers of the coastline and that livelihoods, such as those based on tourism, fishing, agriculture, aquaculture, mining, and industry, could impact or be impacted by underwater noise. Although Jamaica does not have specific legislation or policies on underwater noise, she said various national policies and Convention mechanisms are relevant to the impacts on marine species, including the Natural Resource Conservation Act, Beach Control Act, and others. She added that increased seismic activity and proposed offshore construction, along with existing commercial, recreational, and transportation activities, will increase impacts on the marine environment. Jones highlighted avenues through the CBD and International Convention for the Prevention of Pollution from Ships (MARPOL) national reporting requirements that could potentially address underwater noise.

In the ensuing discussion, Canada and Jamaica addressed avenues for possible collaborative opportunities at the regional and international levels to exchange knowledge and build capacity. Mexico and India sought clarification on metrics, resolution of data, and interactive data used by OSPAR in its assessment. Merchant explained that data used is dependent on the period analyzed. Jamaica noted that the Caribbean Community is a potential avenue to address regional monitoring of underwater noise for her country. The IWC, IMO and American Society of International Law, discussed redundant surveys, the work of ICG-NOISE, and OSPAR’s common and candidate indicators.

Mariana Melcón, Fundación Cethus, Argentina, presented studies on anthropogenic underwater noise and its effects on marine mammals in the Argentine Sea. Her institution, she reported, began using bioacoustics in 2010 and has established strong collaborations with research institutions and universities to develop human and technological capacity. She described sound-recording collections of Commerson’s dolphins aimed at assessing impacts of vessel noises on the dolphins’ communication and echolocation. She said most of the acoustic energy from vessels are low frequency noises that overlap with similarly low-frequency dolphin sounds, reducing dolphins’ echolocation space by up to 70% and acoustic communication space by up to 90%.

Carrie Brown, Vancouver Fraser Port Authority, Canada, presented on the ECHO Program aimed at understanding and managing the impact of shipping activities on at-risk whales in Canada’s Pacific South Coast. The ECHO Program, she reported, has accumulated over 5000 sound measurements since 2015 to better understand underwater noise and potential effects on endangered killer whales. She highlighted the Haro Strait voluntary vessel slowdown trial in 2017, which tested the impact of slower vessels crossing the feeding area of the southern resident killer whale population. She said the results showed over 50% reduction in sound intensity, adding that vessel compliance was incentivized through reduced harbor fees.

IFAW asked how the ECHO initiative could be expanded to other ports. IWC queried how offsetting harbor dues affected port profitability, and whether slowing down of vessels disrupted harbor operations. France asked if vessels are likely to avoid the port due to the slow speed. Brown responded that protecting the iconic killer whales was a motivation for the ECHO Program and that similarly endangered species may enable replication of the scheme. She explained that the Vancouver Port incorporates the offset of harbor dues in its financial plan and that, although

there is a risk of vessels diverting to neighboring ports, many compensated for slowing down by high speeds outside the slow-down zones.

Discussion Panel 3: During the final panel session, on Wednesday afternoon, the presentations offered additional examples of cooperation and coordination from two countries (Madagascar and the Netherlands), a voluntary certification programme, an NGO, industry representative, and an IGO.

Zo Lalaina Razafiarison, Ocean State Secretary, Madagascar, presented on his country's challenge to tackle anthropogenic underwater noise, noting that the 2008 whale-stranding incident brought whales into Madagascar's shallow waters. He explained that an independent investigation concluded that the strandings were caused by cartographic surveys, and that the event identified gaps in his country's knowledge, expertise, and legislation to investigate, evaluate, and prevent noise pollution. Noting significant maritime traffic in their EEZ, he reviewed relevant agreements at the international, regional, national, and local levels. He identified the need to improve international cooperation and collaboration, raise awareness, build capacity of scientists and technical experts, acquire and maintain equipment and facilities, and develop a platform for interstate and inter-organizational exchanges to combat underwater noise pollution.

René Dekeling, Ministry of Infrastructure and Water Management, the Netherlands, identified reasons for cooperation in underwater noise management, including the transboundary nature of sound, requirements under the EU region MSFD, the need to harmonize measures, and the generic nature of many research questions. He noted that offshore wind energy development resulted in a regulatory change in his country requiring noise reductions due to impacts on harbor porpoises. He said further work on international harmonization was needed at different levels, including: development of a common environmental assessment framework; agreement on short-term effect levels; and technical standardization. He reviewed the EU directives and the Netherlands' marine strategy defense-related activities, and described results of defense research, which focused on quantifying animals' response to determine which species are the most sensitive. Noting that controlled exposure experiments are complex and costly, he said his country is looking for international cooperation and highlighted collaboration with the UK, Norway, France, and the US. He described the Joint Monitoring Programme for Ambient Noise in the North Sea (JOMOPANS) and the potential for its measures and modelling to be used for management tools elsewhere.

Véronique Nolet, Green Marine, presented on her organization's approach to addressing underwater noise generated from shipping activities through a voluntary, multi-stakeholder reporting initiative. She said Green Marine addresses key environmental issues through performance indicators that encourage ship owners, ports, terminals, seaway corporations, and shipyards to reduce environmental footprints by undertaking concrete and measurable actions. She explained that the certification process requires annual benchmarks of environmental performance and self-evaluation guidelines, and review by an accredited external verifier every two years. With 124 participating companies in the US and Canada, Nolet said awareness raising and harmonization with existing initiatives in environmental certification is a priority.

Howard Rosenbaum, WCS, presented on effective coordination and cooperation for mitigating ocean noise impacts. He highlighted key events and milestones in including ocean noise in the lead-up to the 2017 UN Ocean Conference and emphasized the need for a UN resolution on ocean noise along with a broader recognition of noise as a form of marine pollution. On international measures to address ocean noise, he referred to the IMO's vessel-quieting guidelines, the US National Oceanographic and Atmospheric Agency's Ocean Noise Strategy, and the voluntary commitments to reduce ocean noise pollution in connection with the UN Ocean Conference. On area-based management measures, he recommended that ocean noise be addressed in the context of CBD Aichi Target 11 (protecting 10% of the world's oceans by 2020) by committing countries to reduce ocean noise in MPAs. On national implementation, he urged for the translation of science and associated efforts to more concrete actions and activities by Member States and other stakeholders, and recommended that countries mainstream ocean noise in national development as a means to achieve sustainable development.

Frank Thomsen, CEDA, presenting on the role of industry in managing the impacts of underwater noise on marine life, noted best practice implementation by using EIAs to assess risks. He also highlighted its role in information dissemination, citing publications relevant to underwater noise on dredging, and noted industry's role in funding research on anthropogenic underwater sound.

Mark Tasker, ICES, spoke about ICES's role and capacity in addressing underwater noise. He highlighted the use of underwater sound for fish stock surveys and the work of the ICES Working Group on Fisheries Acoustics, Science and Technology. He drew attention to development of survey standards and recommendations summarized in a publication, "Underwater Noise of Research Vessels, Review and Recommendations," as well as its advice on the effects of military sonar, and work to implement the EU's MSFD.

During the discussion, New Zealand requested more information on external verifiers for Green Marine, and India addressed specifics on soundscape modelling.

OceanCare highlighted publications on population-level impacts on fish stocks. The EU emphasized the need to identify ecologically sensitive areas, and recognize EIAs as key to mitigating risks of impacts from industry. Canada asked about the value of creating a new ICES group focused on underwater noise. Norway said they would request the UN Environment Assembly (UNEA) to grant observer status to ICES.

Inter-agency cooperation and coordination

On Thursday morning, Miguel de Serpa Soares, UN Under-Secretary-General for Legal Affairs and UN Legal Counsel, in his capacity as the UN-Oceans Focal Point, reported on the work of UN-Oceans. He highlighted its contributions to the Partnership Dialogues and organization of side events at the 2017 UN Ocean Conference. He noted, *inter alia*:

- the UN-Oceans launch of the Voluntary Commitment process to raise awareness of relevant regulatory and policy frameworks and members' activities for conserving and sustainably using oceans and their resources in advancing SDG 14;

- consultations on development of indicators for SDG Target 14.c (number of countries making progress in ratifying, accepting and implementing through legal, policy, institutional frameworks, and ocean-related instruments that implement international law under UNCLOS); and
- progress in the development of methodology for the SDG indicators, and agreement by UN-Oceans members to develop a questionnaire for collecting data from states.

On the issue of underwater noise, he emphasized that cooperation and coordination is vital to developing scientific understanding of anthropogenic impacts.

In response to comments by the EU and US about the work to develop indicators and methodology related to SDG Target 14.c, UN Division of Ocean Affairs and the Law of the Sea Director Gabriele Goettsche-Wanli explained that the list of binding and non-binding instruments was based on those instruments where UN-Oceans acts as Secretariat and was not intended to be exhaustive. She agreed with the US that some included in the list are more “actionable” than others and noted the complexity of attempting to develop a comprehensive list.

Goettsche-Wanli also provided an update on the status of the depleted ICP Voluntary Trust Fund, which enables participation from developing countries. She acknowledged the contribution from New Zealand and reiterated the urgency of replenishing the Trust Fund by urging Member States and other donors to contribute.

Process for the selection of topics and panelists so as to facilitate the work of the General Assembly

On Thursday morning, Co-Chair Korneliou highlighted General Assembly resolution 71/257 on Oceans and the Law of the Sea and noted a further review of the work of the ICP at the next session of the General Assembly.

Issues that could benefit from attention in the future work of the General Assembly on oceans and the law of the sea

On Thursday morning, Co-Chair Korneliou invited delegates to comment on the streamlined list of issues contained in a document made available online and to submit additional issues that could benefit from attention in the future work of the UNGA. He asked delegates to consider the further review of the effectiveness and utility of the ICP, which will be undertaken by the 73rd session of the UN General Assembly (UNGA 73). Noting no statements on this item, Co-Chair Korneliou said a Co-Chairs’ summary would be circulated on Friday morning, reiterating that the document is intended for reference purposes only and not as an official record of discussions.

Consideration of the outcome of the meeting

Co-Chairs’ Summary of Discussions: On Friday morning, the Co-Chairs presented their summary, capturing key points of ICP-19 discussions on each of the agenda items. Highlights include summaries of discussions on, *inter alia*:

- negative impacts of anthropogenic underwater noise on marine fauna;
- the importance of addressing socioeconomic impacts on sectors such as tourism, fishing, and transportation, among others;
- gaps in knowledge and the lack of data on sources and impacts of anthropogenic underwater noise;
- the need for standardization of methodology and approaches for data collection and monitoring techniques;

- recognizing anthropogenic underwater noise as a form of pollution, including in SDG 14 indicators;
- links between anthropogenic underwater noise and other drivers, such as ocean acidification;
- potential management approaches, including area-based management tools and EIAs;
- application of the precautionary approach in light of data and knowledge gaps, and the polluter-pays principle;
- suggestions that an UNGA resolution could characterize anthropogenic underwater noise as a form of transboundary marine pollution to be mitigated and addressed;
- national and regional actions to address anthropogenic underwater noise;
- the need for increased cooperation and collaboration between states and for cross-sectoral coordination; and
- the importance of capacity building, transfer of knowledge and technology to address knowledge gaps and uncertainties and alleviate negative impacts of anthropogenic underwater noise.

Feedback on the Co-Chairs’ Summary: Co-Chair

Beckles invited participants to review and provide feedback on the Co-Chairs’ summary. In the ensuing discussions, participants congratulated the Co-Chairs and the Secretariat on a comprehensive summary.

Participants suggested several amendments and clarifications to the text. Issues included, *inter alia*:

- a statement about whether all sound introduced into the ocean was harmful;
- difficulty identifying the source of some sounds in the ocean;
- rarity of direct, physical injury vs. long-term chronic influence of underwater noise;
- acidification may reduce propagation loss as opposed to amplifying sound;
- the intent of the CMS Family Guidelines as national guidance;
- modelling and risk-based approaches;
- significant effects at the population level could be very small if only a small proportion of the population is affected; and
- a voluntary commitment on anthropogenic underwater noise was not specifically related to the concept of creating a new ICES working group.

Closing Plenary

During the closing plenary on Friday, Canada announced a new initiative in her country to protect three species of whales, including measures to reduce underwater vessel noise.

Co-Chair Korneliou thanked the panelists for their presentations on a wide range of challenges and delegates for their “lively participation,” noting his increased understanding of the importance of this issue. In response to a question from France, the Secretariat explained that the introduction of any resolution to the UNGA on anthropogenic underwater noise would be up to Member States, including what elements might be included, and that the Secretariat was available to assist.

Co-Chair Beckles gavelled the meeting to a close at 12:43 pm.

A Brief Analysis of ICP-19

“There are no quiet oceans.” This comment during a panel session at the nineteenth meeting of the Open-ended Informal Consultative Process (ICP-19) captured the pervasive and complex nature of this year’s topic: anthropogenic underwater noise. With a week of presentations on the sources and physics of underwater sound, impacts on marine life and ecosystems, and

options for increased cooperation and coordination, it was clear that this year's meeting had a strong infusion of academics, along with a mix of representatives from industry, non-governmental and intergovernmental organizations, and government delegates.

The "informal" aspect of the ICP fosters an open exchange, offering more voice to participants from civil society than that afforded in many other UN processes. In his closing remarks, Co-Chair Kornelios Korneliou characterized the exchange as "lively participation." Delegates agreed there are major knowledge gaps, especially regarding baseline information on the marine acoustic environment and on cumulative impacts of chronic noise and other human-induced stressors. They differed, however, on whether existing knowledge warrants swift action, or if more studies are needed to justify regulatory reform or measures at the international level.

This brief analysis will review some of the highlights from ICP-19, including: the nature and scale of the problem; stakeholder involvement; challenges and opportunities for cooperation and coordination at multiple levels; and options for a path forward.

The Noise Factor

A 2008 stranding of 100 melon-headed whales in the shallow waters of Madagascar shed light on how little is known about the impacts of ocean noise. ICP-19 delegates noted some progress in filling the gaps, observing that research had previously focused almost exclusively on cetaceans, but increasingly has expanded to examine impacts on other biota, including fish and invertebrates. Some delegates cited noise-related damage across many taxa, with impacts to sensory systems, displacement of marine animals from foraging and breeding areas, and masking of intraspecies communication. Urging immediate action and application of the precautionary principle, some said "the ocean is getting noisier," piling on the noise stressor in addition to bycatch, collisions, toxic pollutants, and climate change. But others questioned ascribing too much blame to underwater noise, citing challenges in determining which sounds are to blame for negative impacts, as well as the complexity of assessing the scale of impact on populations and ecosystems.

Further complicating the issue, ICP-19 discussions revealed that impacts can vary according to frequency, duration, and intensity of underwater noise, and that impacts in specific geographic areas, such as displacement of fish or their prey from foraging or breeding grounds, could have cascading ecosystem effects and impacts on human livelihoods and food security.

So where is all this noise coming from?

Noisemakers

Maps showing the crisscross pattern of ship movements across the globe accompanied the reported statistic that shipping—the "engine of the global economy"—is responsible for 90% of the movement of goods in international trade. Two presentations highlighted the challenges of understanding which ship sources impact which species, where, and how much. The first was a reported decrease in stress hormones in a group of right whales when shipping activity temporarily ceased in a particular area, indicating that chronic underwater noise, not just single, short-term blasts, can harm marine organisms. Another study showed that small boat activity, not larger cruise ships, produced most of the sound in a popular reef area, but that both sources contributed

to masking the low-frequency calls of the endangered splendid toadfish. Location, species and frequency all matter.

Discussions outlined other sources of ocean noise including: offshore energy development; oil and gas exploration; cable and pipeline installations; mapping for research and resource exploitation; surveys to determine location and abundance of marine life for research and fishing purposes; and military activities.

Some delegates questioned why there wasn't greater participation of the "noisemakers" at ICP-19. Some weren't surprised by the lack of military representation (the one planned presenter had to cancel at the last minute), suggesting that discussions may have been easier without the "big guns" in the room. Competing explanations included intentional exclusion, late notice, and lack of interest. Despite a perceived imbalance by some, those present expressed appreciation for the opportunity to have off-the-record, informal discussions between NGOs and industry representatives.

Shhhh....!

How do we hush an ocean? Or rather, how do we hush unnecessary, anthropogenic underwater noise for the protection of whales, fish, zooplankton, and other marine life, while also ensuring that human endeavors in and on the ocean continue, including those of coastal communities and artisanal fisheries?

Discussions elucidated technological solutions through vessel quieting designs; maintenance options such as regular propeller cleaning and repair; and use of quieter engines and hull form design or modification. An example by Maersk Line showed that a retrofit of its ships to improve energy efficiency also reduced noise outputs, suggesting a possible "win-win" approach that could be replicated within the shipping industry. However, Maersk Line cautioned against applying the results too broadly, given the need for a fuller understanding about underwater sound generation from shipping and ways to manage impacts on marine mammals.

After three panel discussions that delved into the nature of the problem, the ICP then focused on coordination and cooperation at international, regional, and national levels. Discussions covered potential use of various management options, including guidelines developed by the International Maritime Organization, and by the Convention on the Conservation of Migratory Species of Wild Animals. These guidelines, along with measures by the Port of Vancouver and OSPAR, demonstrated not just regional attempts to address the issue, but, as some delegates noted, paths to inform global approaches. Others observed that the use of MPAs as quiet zones and implementation of environmental impact assessments are examples of national approaches that take into account regional and global technical know-how. Delegates also linked the use of MPAs to minimize anthropogenic underwater noise to CBD Aichi Target 11 (conservation of 10% of coastal and marine areas), which many highlighted as a key avenue for forward progress. Others said the issue of anthropogenic underwater noise, which is often transboundary in nature, might be addressed in the negotiations on an international legally binding instrument under UNCLOS on BBNJ.

Also highlighted as particularly relevant was SDG 14 (life below water) indicator 14.C.1, as it relates to the work of UNCLOS, and which presents the opportunity to include anthropogenic underwater noise as a source of marine pollution. The issue can be further addressed under the voluntary

commitment process, introduced under the 2017 UN Ocean Conference, which numerous delegates referenced as a constructive, collaborative, and action-oriented way forward.

Ultimately, the relevance of the ICP's discussions to other processes and mechanisms, within and outside the UN system, remains dependent on the actions of UN Member States to advance the issue at national or regional levels, or through the General Assembly. On the practical side, the global influence and authority of the IGOs and UN agencies present at ICP-19 can continue to provide other avenues to maintain or generate momentum on the issue of anthropogenic noise.

The Sounding Board

What will be the lasting effect of ICP-19? The open sharing of ideas and success stories remains a key part of the ICP, as evidenced by presentations by WCS and OSPAR, whose scientific, interactive data and subsequent policy interventions and management tools at the regional level was referred to as an effective replicable strategy for other areas, such as the Caribbean and/or the Pacific regions. A continuing concern for delegates and the Secretariat is ICP's inability to support broader participation by LDCs and SIDS, due to the depleted ICP Voluntary Trust Fund. Their representation at ICP-19 was less than last year, perhaps owing to ICP-18's focus on oceans and climate change, which may have been viewed as a more urgent topic, or perhaps underscoring the need for capacity building, including awareness raising, about the importance of anthropogenic underwater noise.

The ICP is up for review by the 73rd session of General Assembly later this year, which will likely determine the topics for the next two meetings. Delegates new to the process said the ICP is a valuable forum for exchanging information and making connections with other experts. Some longtime delegates expressed continued support, noting it still adds a "lot of value to national and regional action." According to one developed-country delegate, the opportunity to delve deep into issues and openly discuss them in a technical way offers a lot of value to their relevant national processes.

As ICP-19 drew to a close, Canada's excited request to share breaking news, about a whale initiative that includes efforts to reduce underwater noise, was a fitting end: a story of hope, that progress is not only possible but already happening.

Upcoming Meetings

Fifth International Marine Conservation Congress: The fifth International Marine Conservation Congress (IMCC 5), organized by the Society for Conservation Biology's Marine Section, will bring together marine conservationist professionals and students to develop new and powerful tools to further marine conservation science and policy. The theme of IMCC 5 is "Make Marine Science Matter." **dates:** 24-29 June 2018 **location:** Kuching, Sarawak, Malaysia **contact:** Travis Nielsen, Meeting Manager **email:** info@imcc5.com **www:** <https://conbio.org/mini-sites/imcc5/>

First Meeting of the Informal Advisory Group on Ecologically or Biologically Significant Marine Areas: This meeting will consider: the scope, approaches, and steps for revising and further developing existing scientific guidance on the application of the scientific criteria for ecologically or biologically significant marine areas (EBSAs); and the scope, approaches, and steps for revising and further developing existing training manuals, including the training manual on the application

of EBSAs and the training manual on the incorporation of traditional knowledge into the description and identification of EBSAs. It will also address the preliminary results of a scientific gap analysis of the process of regional workshops to facilitate the description of the EBSAs under the Convention on Biological Diversity, and implications for the future work on EBSAs; and discuss the scope, approaches and steps for improving the functionality of the EBSA repository and the information-sharing mechanism. **dates:** 30 June-1 July 2018 **location:** Montreal, Canada **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <https://www.cbd.int/meetings/EBSA-OM-2018-01>

CBD SBSTTA-22: The 22nd meeting of the Subsidiary Body on Scientific, Technical and Technological Advice of the Convention on Biological Diversity (CBD) will address, *inter alia*: protected areas, marine and coastal biodiversity, biodiversity and climate change, and digital sequence information on genetic resources. **dates:** 2-7 July 2018 **location:** Montreal, Canada **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <https://www.cbd.int/meetings/SBSTTA-22>

CBD SBI-2: The CBD Subsidiary Body on Implementation will address, *inter alia*: review of progress in the implementation of the Convention and the Strategic Plan; biodiversity mainstreaming; resource mobilization; cooperation with other conventions; mechanisms for review of implementation; enhancing integration of Article 8(j) under the Convention and its Protocols; review of effectiveness of the processes under the CBD and its Protocols; and preparation for follow up to the Strategic Plan. **dates:** 9-13 July 2018 **location:** Montreal, Canada **contact:** CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <https://www.cbd.int/meetings/SBI-02>

High-level Political Forum on Sustainable Development (HLPF) 2018: The theme of HLPF 2018 will be "Transformation towards sustainable and resilient societies." The set of Sustainable Development Goals (SDGs) to be reviewed in depth are SDG 6 (water and sanitation), 7 (energy), 11 (sustainable cities), 12 (sustainable consumption and production patterns), 15 (life on land), and 17 (partnerships). **dates:** 9-18 July 2018 **location:** UN Headquarters, New York **contact:** UN Division for Sustainable Development **email:** <https://sustainabledevelopment.un.org/contact/> **www:** <https://sustainabledevelopment.un.org/hlpf/2018>

24th Session of the ISA Assembly and the ISA Council (Part II): The ISA Council will consider the 2017 report of the Finance Committee, including the 2019-2020 budget proposals, and the 2018 report of the Legal and Technical Commission. The ISA Assembly will consider the 2019-2020 budget, a draft strategic plan for the ISA, and the Council's report. **dates:** 2-13 July 2018 for the Legal and Technical Commission; 9-12 July 2018 for the Finance Committee; 16-20 July 2018 for the Council; and 23-27 July 2018 for the Assembly. **location:** Kingston, Jamaica **contact:** ISA Secretariat **phone:** +1-876-922-9105 **fax:** +1-876-922-0195 **email:** <https://www.isa.org.jm/contact-us> **www:** <https://www.isa.org.jm/>

First Session of the Intergovernmental Conference on BBNJ: The first session of the Intergovernmental Conference (IGC) on an international legally binding instrument under the UN Convention on the Law of the Sea (UNCLOS) on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction (BBNJ) follows an

organizational session (held in April 2018) and will begin work based on the elements of a draft text of an international legally binding instrument on the conservation and sustainable use of marine BBNJ under UNCLOS, which was developed by the preparatory committee. **dates:** 4-17 September 2018 **location:** UN Headquarters, New York **contact:** UN Division of Ocean Affairs and the Law of the Sea (UNDOALOS) **phone:** +1-212-963-3962 **email:** doalos@un.org **www:** <https://www.un.org/bbnj/>

67th Meeting of the International Whaling Commission (IWC 67): IWC 67 will convene in Brazil to discuss aboriginal subsistence whaling, cetacean status and health, unintended anthropogenic impacts, scientific permits, conservation management plans, whale watching, and other whale conservation and management issues. **dates:** 10-14 September 2018 **location:** Florianopolis, Brazil **contact:** IWC Secretariat **phone:** +44(0)1223- 233-971 **fax:** +44(0)1223-232-876 **www:** <https://iwc.int/iwc67>

2018 Arctic Circle Assembly: The annual Arctic Circle Assembly is the largest annual international gathering on the Arctic and is attended by heads of state and government, ministers, members of parliaments, officials, experts, scientists, entrepreneurs, business leaders, indigenous representatives, environmentalists, students, activists and others interested in the future of the Arctic. **dates:** 19-21 October 2018 **location:** Reykjavik, Iceland **contact:** Secretariat **email:** secretariat@arcticcircle.org **www:** <http://www.arcticcircle.org/assemblies/future>

73rd Session of the Marine Environment Protection Committee of the International Maritime Organization (MEPC 73): At its last session, the MEPC agreed to include a new output to address the issue of marine plastic litter from shipping in the context of SDG 14 (Life below Water). Member States and international organizations were invited to submit concrete proposals to MEPC 73 on the development of an action plan. **dates:** 22-26 October 2018 **location:** London, United Kingdom **contact:** IMO Secretariat **phone:** +44 (0)20 7735 7611 **email:** info@imo.org **www:** <http://www.imo.org/en/MediaCentre/MeetingSummaries/MEPC/Pages/Default.aspx>

Fourth Intergovernmental Review Meeting on the Implementation of the GPA: The UNEP Global Programme of Action (UNEP/GPA) aims at preventing the degradation of the marine environment from land-based activities by facilitating the realization of the duty of states to preserve and protect the marine environment. The Fourth Intergovernmental Review Meeting on the Implementation of the GPA allows governments and other stakeholders to review the status of the implementation of the GPA and decide on action to be taken to strengthen its implementation. **dates:** 31 October- 1 November 2018 **location:** Bali, Indonesia **contact:** UNEP GPA Coordination Office **email:** gpa@unep.org **www:** <http://www.unep.org/nairobiconvention/unep-global-programme-action-unepgpa>

2018 UN Biodiversity Conference: The 14th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD), the 9th Meeting of the Parties to the Cartagena Protocol on Biosafety and the 3rd Meeting of the Parties to the Nagoya Protocol on Access and Benefit-sharing (CBD COP 14, Cartagena Protocol COP/MOP 9, and Nagoya Protocol COP/MOP 3) are expected to address a series of issues related to implementation of the Convention and its Protocols. **dates:** 14-29 November 2018 **location:** Sharm el-Sheikh, Egypt **contact:**

CBD Secretariat **phone:** +1-514-288-2220 **fax:** +1-514-288-6588 **email:** secretariat@cbd.int **www:** <https://www.cbd.int/conferences/2018>

Third Meeting of the Signatories to the Memorandum of Understanding on the Conservation of Migratory Sharks: The third meeting of the Signatories to the Memorandum of Understanding on the Conservation of Migratory Sharks (Sharks MOS3) will address proposals to amend the MOU, among other issues. **dates:** 10-14 December 2018 **location:** Principality of Monaco **contact:** Andrea Pauly, UNEP/CMS Secretariat **phone:** +49-228-815-2401 **fax:** +49-228-815-2449 **email:** andrea.pauly@cms.int **www:** <https://www.cms.int/sharks/en/MOS3>

Fourth Session of the UN Environment Assembly (UNEA-4): UNEA-4 will focus on the theme, “Innovative solutions for environmental challenges and sustainable consumption and production (SCP).” UNEA-4 will be preceded by the Fourth Open-ended meeting of the Committee of Permanent Representatives from 4-8 March 2019. **dates:** 11-15 March 2019 **location:** Nairobi, Kenya **contact:** UNEP Secretariat **phone:** +254-20-762-1234 **email:** unepinfo@unep.org **www:** <http://web.unep.org/environmentassembly/>

ICP-20: The dates and topic for the next meeting of the ICP will be determined by the 73rd session of the UN General Assembly in its annual debate on “Oceans and the law of the sea.” **dates:** TBD **location:** UN Headquarters, New York **contact:** UNDOALOS **phone:** +1-212-963-3962 **email:** doalos@un.org **www:** http://www.un.org/depts/los/consultative_process/consultative_process.htm

Glossary

BBNJ	Biodiversity in areas beyond national jurisdiction
CBD	Convention on Biological Diversity
CEDA	Central Dredging Association
CMS	Convention on the Conservation of Migratory Species of Wild Animals
ECHO	Enhancing Cetacean Habitat and Observation Program
EEZ	Exclusive economic zone
EIA	Environmental impact assessment
ICES	International Council for the Exploration of the Sea
ICP	UN Open-ended Informal Consultative Process on Oceans and the Law of the Sea
IFAW	International Fund for Animal Welfare
IMO	International Maritime Organization
IWC	International Whaling Commission
LDCs	Least developed countries
LLDCs	Landlocked developing countries
MPAs	Marine protected areas
MSFD	Marine Strategy Framework Directive
NRDC	Natural Resources Defense Council
OSPAR	Convention for the Protection of the Marine Environment of the North-East Atlantic
PSSA	Particularly Sensitive Sea Area
SDGs	Sustainable Development Goals
SIDS	Small island developing states
UNCLOS	United Nations Convention on the Law of the Sea
UNGA	United Nations General Assembly
WCS	Wildlife Conservation Society