
IFAW submission: Concept Papers for Partnership Dialogues of the United Nations Oceans Conference and zero draft of the Call to Action

Summary

The International Fund for Animal Welfare (IFAW) is a non-governmental organisation in consultative status with the United Nations Economic and Social Council since 2002. IFAW's mission is to rescue and protect animals around the world. This includes through advocacy to save populations from cruelty and depletion, and involves regular engagement with a number of United Nations institutions and agreements.

IFAW has a marine conservation programme, which has a strong focus on protecting marine mammals. IFAW attended the recent preparatory meeting for the Oceans Conference (February 2017), and participated in a side event on shipping and whale conservation, looking at threats from noise pollution and collisions with vessels. IFAW is the accredited animal welfare observer at the International Maritime Organization (IMO) because of our specialism in these areas.

This submission focuses primarily on themes 1 and 2 for the Partnership dialogues: 'addressing marine pollution'; and 'managing, protecting, conserving and restoring marine and coastal ecosystems', and specifically the issues of underwater noise pollution and human-induced mortality of marine life through collisions with vessels and bycatch and entanglement in fishing gear. The submission includes recommendations for amendments to the zero draft of the Call to Action to address these issues.

IFAW welcomes the inclusion of 'addressing marine pollution' as a theme in the Oceans Conference. Sustainable Development Goal 14 includes a specific target (14.1) on marine pollution, which calls on nations to prevent and significantly reduce marine pollution of all kinds (emphasis added). While IFAW welcomes the focus to date on plastic pollution, this is not the only form of pollution and we urge consideration of other forms, in particular underwater noise pollution which has so far been overlooked.

Given the global scale and documented impacts of direct mortality and acoustic habitat loss on a wide range of marine species, it is critical to incorporate addressing noise pollution into the framework for delivery of the SDG14 targets and specifically within the Call to Action. Major challenges exist in addressing underwater noise pollution given the predicted growth of global shipping. The major opportunity with respect to ocean noise pollution, however, is that in contrast to other forms of marine pollution, it is not a persistent pollutant; once the noise stops the pollution is removed from the marine environment instantly. If concerted efforts are made to reduce noise at source, then tackling underwater noise pollution is highly achievable.

IFAW also believes the Call to Action should address other forms of human-induced mortality and injury on marine species, particularly marine mega-fauna. Principal among these are collisions with vessels, or ship-strikes as these are known, and incidental death and injury through bycatch and entanglement in fishing gear.

We have included in this submission suggestions for how these issues could be incorporated into the Call to Action and the concept papers for the partnership dialogue themes.

Introduction

The International Fund for Animal Welfare (IFAW) is a non-governmental organisation in consultative status with the United Nations Economic and Social Council since 2002. IFAW also regularly engages with a number of other United Nations Multilateral Environmental Agreements (MEAs) to further IFAW's mission, which is to rescue and protect animals around the world. These include the Convention on International Trade in Endangered Species (CITES), the Convention on Biological Diversity (CBD), and the Convention on Migratory Species (CMS)

To achieve our mission, IFAW works to rescue individuals, safeguard populations, and preserve habitat. With projects in more than 40 countries, IFAW provides hands-on assistance to animals in need and advocates saving populations from cruelty and depletion. As part of this work IFAW has a marine conservation programme, which has a strong focus on protecting marine mammals.

IFAW attended the recent preparatory meeting for the Oceans Conference (February 2017), and participated in a side event organised by WCS and IUCN on shipping and whale conservation. The impacts of shipping on whales and other marine life, primarily through the introduction of noise pollution into their habitats and direct mortality and injury from collisions with vessels, have been a major part of IFAW's work for many years. IFAW is the accredited animal welfare observer at the International Maritime Organization (IMO) because of our specialism in these areas.

This submission focuses primarily on themes 1 and 2 for the Partnership dialogues: 'addressing marine pollution'; and 'managing, protecting, conserving and restoring marine and coastal ecosystems'. As well as addressing the components of the concept papers as outlined in the recent information note to stakeholders (8 March), it also recommends related amendments to the zero draft of the Call to Action.

Zero draft of the Call to Action

IFAW welcomes the inclusion of 'addressing marine pollution' as a theme in the Oceans Conference. Sustainable Development Goal 14 includes a specific target (14.1) on marine pollution, which calls on nations to prevent and significantly reduce marine pollution of all kinds by 2025 (emphasis added). While IFAW welcomes the focus to date on plastic pollution, this is not the only form of pollution and we urge consideration of other forms, in particular underwater noise pollution which has so far been overlooked. It is not mentioned in the zero draft of the Call to Action, although it was mentioned by some Member States during the preparatory meeting.

Underwater noise pollution is often overlooked in discussions of marine pollution because, unlike some other forms of pollution, it is an invisible threat. Yet for many marine species, particularly marine mammals, the ability to create and hear natural sounds is vital to their existence. Numerous species, from whales to dolphins to shrimps, use sound to communicate, navigate, feed, and avoid predators. Indeed, because the underwater world can be severely limiting to other senses such as vision, for many marine species sound is the primary means to communicate and learn about their environment.

Given the global scale and documented impacts of direct mortality and acoustic habitat loss on a wide range of marine species, including endangered and protected species (see below for supporting information), it is critical to incorporate addressing noise pollution into the framework for delivery of the SDG14 targets and specifically within the Call to Action.

This could be easily done by a small amendment to paragraph 8(g) of the zero draft (additions underlined):

(g) Accelerate action to prevent and significantly reduce marine pollution of all kinds including physical and non-physical forms of pollution, such as underwater noise, and in particular pollution from land-based activities, including marine debris, nutrient pollution, wastewater, solid waste discharges, plastics and microplastics.

IFAW also believes the Call to Action should address other forms of human-induced mortality and injury on marine species, particularly marine mega-fauna. Principal among these are collisions with vessels, or ship-strikes as these are known, and incidental death and injury through bycatch and entanglement in fishing gear. While arguably the latter could be covered under paragraphs 8(m) and (n) of the zero draft (sustainable fisheries management, and ending destructive fishing practices) the emphasis in these paragraphs appears to be more on fish stocks than impacts on non-target species.

Therefore, IFAW proposes incidental human-induced injury and mortality on marine life could be better addressed through an additional paragraph in the Call to Action:

(...) accelerate the adoption of mitigation measures to address incidental human-induced injury and mortality to marine life, in particular collisions with vessels and bycatch and entanglement in fishing gear.

An alternative would be to add a paragraph after 8(j) in reference to sectoral management tools to address these issues, which could include through the IMO for shipping-related issues and RMFOs for fisheries bycatch and entanglement, and species-specific institutions like the IWC:

(...) Strengthen the use of appropriate sectoral and spatial management tools, including temporal and spatial separation, observation and monitoring, and equipment design and adaptation, to address incidental human-induced injury and mortality to marine life, in particular collisions with vessels and bycatch and entanglement in fishing gear.

Background information and supporting references regarding the above issues are provided in the following section in relation to the concept papers for the partnership dialogue themes of the conference.

Concept Papers for Partnership Dialogues

This section addresses themes 1 and 2 for the Partnership dialogues: ‘addressing marine pollution’; and ‘managing, protecting, conserving and restoring marine and coastal ecosystems’, and is organised to match the components of the concept papers as outlined in the recent information note to stakeholders.

Theme 1: Addressing marine pollution

As outlined above IFAW believes it is critical that underwater noise pollution is included in the theme ‘addressing marine pollution’. Sustainable Development Goal 14 includes a specific target (14.1) on marine pollution, which calls on nations to prevent and significantly reduce marine pollution of all kinds by 2025 (emphasis added). To be fully effective, this must include non-physical forms of pollution such as underwater noise pollution.

a) Status and trends

Over the last 100 years or so, as the oceans have become industrialised, increasing levels of human-made (anthropogenic) noise from shipping, oil and gas exploration, naval sonar, construction, and other activities have begun to drown out natural sound. For whales, dolphins, and other marine life, this has resulted in a myriad of impacts, including stress, loss of hearing, masking of biologically important sounds, and avoidance behaviours that have diminished feeding and breeding opportunities, and even death.

The greatest amount of research on the impact of noise on marine life involves marine mammals, particularly whales. For example, the powerful blasts used by industry to prospect for offshore oil and gas have been shown to silence endangered great whales and displace them over vast areas of ocean, in some cases over hundreds of thousands of square miles, undermining their ability to feed or mate.¹

Certain high-intensity naval sonars are known to cause whales to strand, sometimes in mass numbers; and to drive some deep-diving species to dangerously alter their diving behaviour, leading to pathologies

analogous to severe decompression sickness in humans, including bleeding around the brain and the development of lesions in organ tissue.ⁱⁱ

Of great long-term concern is the ongoing rise in ambient noise, primarily from shipping, and its impacts on marine life, including great whales. A blue whale that was born in 1940 would have seen its “acoustic bubble” – the distance over which its vocalizations can travel and be heard – shrink from 1,000 to 100 miles within its lifetime.ⁱⁱⁱ Endangered right whales experience greater stress amid the higher background noise produced by commercial ships, and have been driven to increase the volume of their calls in an attempt to surmount it.^{iv}

Ninety percent of global trade is seaborne; the amount of trade carried by sea has quadrupled since 1970 and doubled over the last two decades.^v The combination of increasing amounts of commercial maritime trade, and increasing speed of the vessels, has increased the amount of noise that shipping traffic is spreading throughout the ocean.

b) Challenges and opportunities

Major challenges exist in addressing underwater noise pollution given the predicted growth of global shipping and increasing effort to explore for oil and gas in new frontier ocean basins not historically exposed to large levels of anthropogenic noise, including regions of critical importance to marine mammal species, such as the Arctic.

Fortunately, in many cases, relatively simple solutions exist to mitigate the problems produced by underwater noise pollution; what is needed is the political will. This is why inclusion in the Call to Action and the concept paper is so important.

The major opportunity with respect to ocean noise pollution, however, is that in contrast to other forms of marine pollution, it is not a persistent pollutant; once the noise stops the pollution is removed from the marine environment instantly. If concerted efforts are made to reduce noise at source, then tackling underwater noise pollution is highly achievable.

With respect to shipping noise, simple calculations suggest that the overall contribution to ambient noise from shipping is dominated by the noisiest 10 percent of vessels.^{vi} The greatest contribution to vessel noise is propeller cavitation, when large numbers of vacuum bubbles created by the motion of propellers collapse. Heavily-cavitating propellers are inefficient, because cavitation is a form of turbulence that creates extra drag on the propeller blades, so that greater energy is required to drive the ships; it also damages the propellers. Reducing cavitation is therefore in the best interests of both marine life and the shipping industry. Designing ships with more efficient propellers can lead to cost reductions, in terms of fuel use and maintenance costs for the shipping companies and will also result in significant reductions in shipping noise, making this a win-win solution for the shipping industry and marine life.

c) Existing partnerships

Ocean noise pollution is increasingly being recognised as an emergent issue that requires action by international institutions to protect the marine environment. For example, at the recent CBD COP13, a further decision was passed on the subject (Dec XIII/10. Addressing impacts of marine debris and anthropogenic underwater noise on marine and coastal biodiversity, see: <https://www.cbd.int/doc/decisions/cop-13/cop-13-dec-10-en.pdf>). The CBD has also previously produced an excellent scientific synthesis on the impacts of underwater noise on marine life (available at: <https://www.cbd.int/doc/meetings/sbstta/sbstta-16/information/sbstta-16-inf-12-en.pdf>).

The Scientific Committee of the International Whaling Commission (IWC) has also made a series of recommendations on ocean noise, the Convention on Migratory Species (CMS) is developing guidelines on the use of Environmental Impact Assessments for noise, and the International Maritime Organization (IMO) has introduced guidelines to address underwater noise pollution from shipping.

However, there is no one single body charged with addressing underwater noise pollution in the marine environment. While work is progressing in some sectors, for example the shipping industry through the IMO, there is a limit to the success so far, as guidelines on noise reduction are voluntary. In other sectors little progress has been made; for example, efforts to develop new, quieter technologies for seismic testing used in oil and gas exploration have not been embraced by industry. Therefore, additional and sustained international collaboration and partnerships are required to limit and reduce the acute and chronic impacts of noise pollution on marine life. It is for this reason that inclusion of underwater noise pollution in the Call to Action and the concept paper is so important.

d) Possible areas for new partnerships

Two areas of new partnerships would help in particular to address noise pollution from shipping. The first is around ship design. Ship design, and propeller design in particular, is such a crucial factor in the amount of underwater noise produced, and given the long life-span of commercial vessels, addressing noise issues at the design and build stage is critical. New partnerships bringing in naval architects and designers, ship building companies and major ship building nations would significantly accelerate measures to address shipping noise.

The other area of potential new partnership is through ports. To date, most efforts to address shipping noise have looked at ships themselves but ports can also provide significant incentives to address noise issues. For example, the Port of Vancouver recently introduced harbour due rate discounts for quieter ships.^{vii}

To ensure the above measures succeed, assistance will be needed from governments. For example, this could be through financial incentives, such as tax breaks or rebates to encourage quieter ship design, or to enable ports to reduce fees for quieter vessels. Quieter ship design would also benefit from government and industry assistance for further research and development. Governments and scientific institutions would also be critical to success in terms of monitoring noise levels, and enforcing measures put in place.

e) Guiding questions for the dialogue

In terms of guiding questions for the whole theme of addressing marine pollution, one important issue is to ensure that all forms of marine pollution are being addressed effectively. This should include noise pollution. Another key question is about which initiatives can generate most impact. As outlined above, the major opportunity with respect to ocean noise pollution is that in contrast to other forms of marine pollution, it is not a persistent pollutant; once the noise stops, the pollution is removed from the marine environment instantly. If concerted efforts are made to reduce noise at source, then tackling underwater noise pollution is highly achievable.

One key question for addressing underwater noise pollution relates to where and when to prioritise sectoral or spatial approaches. For example, it may be possible to introduce noise limits in specific locations, such as important habitats for susceptible species, or to use marine spatial planning and protected areas to separate noise making activities and marine life. However, this should not be the sole approach as it is much more efficient to address the noise at source (e.g. on the ships, or through quieter seismic technology) and then this will benefit oceans and marine life everywhere.

Theme 2: managing, protecting, conserving and restoring marine and coastal ecosystems

As outlined above IFAW also believes it is critical that forms of human-induced mortality and injury on marine species, especially marine mega-fauna, are addressed in the Call to Action and concept papers. Principal among these are collisions with vessels, or ship-strikes as these are known, and incidental death and injury in bycatch and entanglement in fishing gear. Measures to address shipstrike could be efficiently

addressed alongside efforts to address underwater noise pollution from shipping as discussed above. These interrelated threats would benefit from a sectoral and partnership approach.

a) Status and trends

The International Whaling Commission (IWC) ship strike database collects data on cases of collisions between vessels and whales, or ship-strikes as these are known. However, it is widely recognised that these figures likely significantly under-represent actual incidents. Many mariners do not know about reporting requirements for ship strikes and in many cases ship strikes may go unnoticed; even an animal as large as a whale pales into insignificance against a 300 metre cargo vessel.

Nonetheless, ship strikes are known to be one of the leading causes of human-induced mortality for a number of whale populations around the globe, including many that are already threatened or endangered after decades of whaling.^{viii} The threat is particularly acute where highly threatened species and populations overlap spatially and temporally with dense shipping traffic.

Entanglement in fishing gear has long been recognized by scientists and policy makers around the globe as the most pervasive human-induced threat to cetaceans, causing an estimated minimum of 300,000 cetacean deaths annually.^{ix} Fisheries bycatch was a leading factor in the recent extinction of the Yangtze River dolphin in China, and is causing unsustainable levels of injury and mortality to endangered North Atlantic right whales and Arabian Sea humpback whales, as well as the critically endangered vaquita, Māui and Hector's dolphins, Baltic harbour porpoises and various freshwater cetaceans throughout Asia and South America.^x

b) Challenges and opportunities

For ship strikes, the challenge is in identifying where the problems lie, given the lack of awareness among mariners of when collisions with whales happen and the lack of reporting when they are aware. Nonetheless, in those areas where ship strike has been identified as a threat, the opportunity is that approaches to mitigating it are tried and tested and can be deployed almost anywhere. These include re-routing shipping lanes wherever possible to eliminate or decrease the level of co-occurrence with important whale habitat. Where avoiding co-occurrence is not possible, introducing speed limits in critical whale habitat can be effective.

For bycatch and entanglement, while many studies point to a direct link between declining cetacean population numbers and interactions with fishing gear, much less has been done to determine how to prevent or mitigate cetacean bycatch. Regional and international management efforts have been disparate and inadequate to date. Recent international work to mitigate the bycatch of other species (e.g. seabirds, sharks, turtles) might provide useful models of cooperation to address cetacean bycatch. New partnerships and better coordination, with a determined focus on best practices to prevent and mitigate bycatch and entanglements are required.

c) Existing partnerships

The IWC and IMO have partnered extensively to address the risk of ship strikes, and a number of routing measures have been passed by the IMO to protect important whale habitats in or near shipping lanes. Increasing awareness among mariners is also being addressed through innovative applications of new technology such as the Whale Alert App. The App is currently being used on the East and West coasts of the United States to disseminate information about whale locations and management measures using acoustic data from sonar buoys and real-time reports from vessel captains. This App could be rolled out to other ship strike risk areas but funding is currently lacking to undertake this.

There is no single body charged with addressing the issue of fisheries bycatch and entanglement of cetaceans. There have been some national and intergovernmental efforts and a number of Regional

Fisheries Management Organisations (RFMOs) and other Multilateral Environmental Agreements (MEAs) have undertaken some efforts, with varying degrees of success.

d) Possible areas for new partnerships

The IWC has recently formed a new work stream on bycatch. With input from RFMOs and other bodies this new partnership approach could provide an important opportunity to better coordinate bycatch initiatives in relation to cetaceans. However, the work stream lacks the necessary funding to fully implement the work required.

e) Guiding questions for the dialogue

In terms of guiding questions for the whole theme of managing, protecting, conserving and restoring marine and coastal ecosystems, one important issue is which initiatives can generate most impact. In this respect, protected areas and other spatial measures are attractive as they potentially have benefits for a wide range of marine life in important locations. However, there are also sectoral approaches that can address multiple threats (such as shipping for noise pollution and ship strikes). Similarly, species-targeted initiatives, if targeting keystone species and top predators, can have more widespread benefits for marine ecosystems.

Much like addressing underwater noise pollution, the key question for addressing human-induced mortalities on cetaceans and other marine mega-fauna relates to where and when to prioritise sectoral or spatial approaches.

Spatial approaches have been very effective for ship strikes when targeting ship routeing and/or speed measures in a particular geographical location known to be important to whale populations. However, awareness raising efforts with mariners may be better targeted sectorally through industry membership bodies and partnerships.

Similarly for bycatch and entanglement, spatial approaches may be effective if reducing or removing fishing effort in important habitat for non-target species. However, sectoral approaches may be more appropriate for mitigation such as fishing gear modification for certain types of fisheries.

Further information:

Matthew Collis, Acting Director International Environmental Agreements: +44 7494 328257; mcollis@ifaw.org.

Notes

ⁱ See for example:

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Cerchio, S., Strindberg, S., Collins, T., Bennett, C., and Rosenbaum, H. 2014. Seismic surveys negatively affect humpback whale singing activity off Northern Angola. *PLoS ONE* 9(3): e86464. doi:10.1371/journal.pone.0086464.

ⁱⁱ Fernández, A., Edwards, J.F., Rodriguez, F., Espinosa de los Monteros, A., Herraiz, P., Castro, P., Jaber, J.R., Martin, V., and Arbelo, M. 2015. 'Gas and fat embolic syndrome' involving a mass stranding of beaked whales (Family *Ziphiidae*) exposed to anthropogenic sonar signals. *Veterinary Pathology* 42: 446-457.

ⁱⁱⁱ Clark, C.W., Ellison, W.T., Southall, B.L., Hatch, L., Van Parijs, S.M., Frankel, A., and Ponirakis, D. 2009. Acoustic masking in marine ecosystems: Intuitions, analysis, and implication, *Marine Ecology Progress Series* 395: 201-222.

^{iv} Rolland, R.M., Parks, S.E., Hunt, K.E., Castellote, M., Corkeron, P.J., Nowacek, D.P., Wasser, S.K., and Kraus, S.D., 2012. Evidence that ship noise increases stress in right whales, *Proceedings of the Royal Society B: Biological Sciences* doi:10.1098/rspb.2011.2429. Parks, S.E., Johnson, M., Nowacek, D., and Tyack, P.L. 2011. Individual right whales call louder in increased environmental noise. *Biology Letters* 7:33-35. See also Hatch, L.T., Clark, C.W., van Parijs, S.M., Frankel, A.S., and Ponirakis, D.W. 2012. Quantifying loss of acoustic communication space for right whales in and around a U.S. National Marine Sanctuary. *Conservation Biology* 26: 983-994.

^v Tournadre, J. 2014. 'Anthropogenic pressure on the open ocean: The growth of ship traffic revealed by altimeter data analysis.' *Geophysical Research Letters*, 41 (22): 7924-7932

^{vi} Leaper, R., and Renilson, M. 2012. A review of practical methods for reducing underwater noise pollution from large commercial vessels. *International Journal of Maritime Engineering* 154: A79-A88.

^{vii} See: <https://www.portvancouver.com/news-and-media/news/new-incentive-for-cargo-and-cruise-vessels-intended-to-quiet-waters-around-the-port-of-vancouver-for-at-risk-whales/>

^{viii} Thomas, P. O., Reeves, R. R. & Brownell, R. L. 2015. Status of the world's baleen whales. *Marine Mammal Science*, doi:10.1111/mms.12281.

^{ix} Read, A. J. 2008. The looming crisis: interactions between marine mammals and fisheries. *Journal of Mammalogy* 89, 541-548.

^x See multiple references to scientific papers in WWF. 2016. Cetacean Bycatch and the International Whaling Commission. Available at: http://d2ouvy59p0dg6k.cloudfront.net/downloads/bycatch_factsheet_4.pdf [accessed 17 March 2017]