

## **Report of the Joint SC-CC Intersessional Correspondence Group (ICG) on Marine Debris**

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The Committee and Commission are requested to:

1. Review and endorse the updated version of the Terms of Reference (TOR) for the ICG;
2. Note the overview of the outputs of the last SC (Annex 1);
3. Note and endorse the summary of the work of the ICG to date; and
4. Provide feedback on the comments on the operative parts of Resolution 2022-1.

### **1. Introduction**

Marine debris, particularly in the form of plastic pollution, is an increasingly well-recognised, ubiquitous and worrying form of pollution. The available scientific literature draws attention to cetaceans that have been impacted by the ingestion of marine debris leading to blockages or wounds in their complex alimentary canals and also to other impacts, including entanglement, although the interpretation of entanglement in fishing gear - and especially whether this has happened when the gear is active or abandoned/lost/discarded - remains challenging (Eisfeld-Pierantonio *et al.*, 2016; Richardson *et al.*, 2019; IWC 2020).

As well as larger pieces of plastic debris – especially sheet plastics - there are also growing concerns about the potential for very small pieces of plastic, usually termed microplastics, to affect the health of cetaceans and their prey. The full implications of the impacts of microplastics, including the potential of microscopic-sized pieces to migrate through the bodies of animals and act as carriers for certain compounds, is also now coming into focus and may prove to be highly significant from a health perspective. Micro- and macro-plastics will require different survey techniques. Microplastics can be ingested directly and also potentially transferred from prey species (e.g. krill, copepods and/or fish) to whales where their accumulation may pose a health threat. The effects of microplastics on animal and human health is currently an especially lively area of research.

There is currently significant ongoing research on the issue of marine debris in many universities and other research establishments around the world and a steady output into the scientific literature. The ICG will continue to monitor this.

IWC work to date on Marine Debris has included three marine debris workshops, bringing together experts from a range of relevant fields. The first, was science-focused, analysing the different threats, knowledge gaps and further research requirements. The second was policy-led, agreeing practical, management actions that the IWC could take in order to contribute its expertise most effectively to

each of the global initiatives on marine debris. The most recent, in December 2019, reviewed the latest evidence of ingestion, entanglement, microdebris and toxicology. The reports of all three workshops are available on the IWC's dedicated web page. The latest workshop made some recommendations that are reflected in the 2022 Resolution.

The issue of entanglement of cetaceans in both active and lost fishing gear is another focus of the IWC's work (and another area where Resolution 2022-1 called for further action) and is linked to the marine debris issue as lost or discarded gear can be classified as debris. Since 2012, the IWC has managed an entanglement response capacity building programme facilitating the sharing of best practice. Training workshops have been held around the world and these also teach consistent data collection techniques. The data supplied from responders will be used to improve understanding of the types of fishing gear and debris that pose the greatest threat, in order to develop alternatives.

## **2. Draft Terms of Reference for the next intersessional period (2024-2026) – IWC Marine Debris Intersessional Group**

This is a joint group of the IWC's Conservation and Scientific Committees, which has as its primary aim supporting the Commission in its efforts to address the threats posed by marine debris to all cetacean species.

The group will take into account the report and recommendations of the last IWC workshop on marine debris conducted in 2019<sup>1</sup>, the resolution passed at IWC 68 and any follow-up actions to these decided during IWC 69.

The group will focus in particular on the following tasks:

- i. Identifying and synthesizing relevant knowledge about the impacts on cetaceans of marine plastic pollution interactions and possible measures to address this;
- ii. The further development of an approach for a global risk assessment that helps to identify "hotspots" of cetacean exposure to plastic debris;
- iii. Monitoring and, where appropriate, inputting to relevant regional and multilateral policy initiatives, such as the Intergovernmental Negotiating Committee (INC) to develop an international legally binding instrument on plastic pollution, including in the marine environment; and
- iv. Assessing funding opportunities to further the work on the tasks listed above or related work for the Commission's consideration, including from the Voluntary Conservation Fund.

The group is currently organized in a plenary group and three different sub-groups as described below. Sub-groups report back to the plenary group periodically.

Sub-groups:

- a) Fishing gear, which will examine the linkages between fishing gear and marine plastics, including giving consideration to gear-marking;
- b) Strandings, which will consider data collection and analyses from strandings;
- c) Hotspots, which will address ii. above.

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<sup>1</sup> <https://iwc.int/management-and-conservation/environment/marine-debris>

Each Committee will decide on the continuation of the ICG based on reported progress against these tasks and Commission objectives/priorities will continue to run until it is decided that its work has been completed.

### **3. Work of the ICG to date**

In addition to its role in monitoring and reporting back on the relevant scientific literature and updating the Scientific and Conservation Committees about developments in the sphere of marine debris and in response to Resolution 2022-1, the ICG has discussed how to take forward the requested elements of the resolution and formed itself into the three sub-groups to focus better on particular elements. These subgroups report back to the main ICG.

Information and recommendations have been fed into the Scientific Committee to help its deliberations on addressing this topic and meeting the requirements of Resolution 2022-1. (Please see paper E16 as submitted to the Scientific Committee for more details of this.)

#### **3.1 Survey of recent information**

There are a number of published peer-reviewed reviews of the effects of marine debris on cetaceans. These include Baulch and Perry (2014) and, most recently, Eisfeld-Pierantonio *et al.* (2022). The authors of the latter noted that there is a volume of evidence that points to deleterious effects of marine debris (MD) on cetaceans in terms of both entanglement and ingestion with about 68% of cetacean species known to be affected by interacting with MD. They added that despite the growing body of evidence, there is an ongoing debate on the actual effects of plastics on cetaceans and, in particular, with reference to the ingestion of microplastics and their potential toxicological and pathogenic effects. Current knowledge suggests that the observed differences in the rate and nature of interactions with plastics are the result of substantial differences in species-specific diving and feeding strategies. Existing projections on the production, use and disposal of plastics suggest a further increase of marine plastic pollution. Additionally, Eisfeld-Pierantonio *et al.* (2022) found that the contribution of the ongoing COVID-19 pandemic to marine plastic pollution appears to be substantial, with potentially serious consequences for marine life including cetaceans.

Other recent publications include Fossi *et al.* (2020), which looked at the use of cetaceans as MD bioindicators, the species concerned being sperm whales (*Physeter macrocephalus*), for macro-litter at depth, and fin whales (*Balaenoptera physalus*) for microdebris.

Roman *et al.* (2020) collated information on which specific items were ingested and responsible for causing death across 80 marine species, including cetaceans, pinnipeds, sea turtles, and seabirds. They evaluated which items were responsible for the highest mortality and found that a limited number of consumer items were responsible for most megafauna deaths. Flexible plastic is responsible for the largest proportion of MD deaths, primarily due to gastric obstructions. Disproportionately lethal items included plastic bags/sheets/packaging, rope/fishing nets, fishing tackle and balloons/latex.

#### **3.2 Identifying 'hotspots'**

IWC Resolution 2022-1 clearly points to the desire to identify hotspots. The ICG has interpreted this to mean localities where the interactions between cetacean populations and marine plastics are especially high and of concern.

Hotspots would be defined geographically and might include localities where:

- i. Cetaceans are known to have ingested large amounts of plastics based on post-mortem data (e.g. the franciscanas *Pontoporia blainvillei* in northern Argentina, Denuncio *et al.*, 2011);
- ii. The nature of the material ingested offers a particular threat (e.g. the case of plastic sheeting in Mediterranean sperm whales; de Stephanis *et al.*, 2013);
- iii. Large quantities of plastics accumulate in areas which are also known to be important cetacean habitats, noting that plastics in the water column and on the seabed as well as on the surface may be important; and
- iv. The method of feeding of specific species in particular areas might make them especially vulnerable to ingestion of plastics – for example gray whales (*Eschrichtius robustus*) feeding on benthic sediments.

Hotspots might be identified by looking at where plastics are concentrated in the seas and oceans and how this overlaps with cetacean distributions. Areas of importance to cetaceans and other marine mammals have recently been defined for many sea areas through the Important Marine Mammals Areas (IMMAs) process and this may be of assistance to our work in this regard<sup>2</sup>.

The ICG has also give some consideration to ‘risk assessment’. Some plastic pieces may pass through the alimentary canals of cetaceans causing no harm. By contract, particular types, shapes and sizes of plastics may be especially harmful (Roman *et al.*, 2020). A risk assessment for a particular population may include consideration of what kinds of plastics it is exposed to, in what quantities, and other factors related to the vulnerability of the populations (for example if it is threatened and/or subject to increasing negatively impacting factors such as climate change or bycatch).

Future assessment of the status of cetacean populations should consider MD, noting the strong recommendation from the 2019 IWC Marine Debris Workshop that the next IUCN red list assessment of sperm whales should take MD into account (IWC, 2020).

Future risk assessments and hotspot determinations will undoubtedly benefit from future research, making it important for the ICG/SC to continue to monitor and, where appropriate, encourage key areas of research.

### **3.3 The importance of strandings-derived data**

Strandings-derived information is highly important to both understanding the effects of MD on cetaceans and also in identifying hotspots. Strandings need to be examined according to agreed protocols (including how plastics are classified) in order to ensure the quality of data and also so that it can be shared and compared.

The 2019 workshop recommended that the IWC Scientific Committee consider development of a MD database of information from post-mortem examinations, taking into account the model provided by the IWC ship strikes database. This would contribute to global surveillance on MD and help capture information.

Members of the ICG have been in discussion with the IWC Secretariat about how to best develop an IWC database that will facilitate collection of strandings data related to MD. This might be a stand-alone database or, more likely, integrated into an IWC database that facilitates other data-collection. These discussions are ongoing. Developing and managing such a database will have budgetary implications. During these discussions a vision statement for the MD database was developed.

### **3.4 Fishing gear-related matters**

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<sup>2</sup> The IMMAs work is a product of the Marine Mammal Protected Areas Task Force. Its website is here and shape files are available of each of the identified areas <https://www.marinemammalhabitat.org/>

The fisheries sub-group was asked to consider the relationship between MD and fishing gear, including how cases of entanglement with live gear might be distinguished from those with lost gear.

A draft questionnaire was produced in response to the relevant part of Resolution 2022-1<sup>3</sup>: This has been developed to compile information on ongoing and planned gear-marking initiatives, that (intentionally or secondarily) provide insight into the origin and pathways of Abandoned, Lost or otherwise Discarded Fishing Gear (ALDFG) in national and international waters. The intent is to get a sense of the global scale, timing and locations of these activities and identify priority areas where IWC SC can collaborate and assist in enhancing gear-marking projects.

Once reviewed and endorsed by the relevant Committees and working groups, the intention is that the questionnaire will be distributed to contracting governments, as well as Committee and working group members and experts.

#### **4. Opportunities for collaboration**

Further to the encouragement in Resolution 2022-1 to ‘increase collaboration and cooperation with relevant international organisations and bodies’, the ICG notes that, the Convention on the Conservation of Migratory Species (CMS) has recently started a work stream on marine pollution, including MD<sup>4</sup>.

In addition, CMS is researching the role of Fish Aggregating Devices (FADs) in the generation of MD<sup>5</sup>. Discussions have been initiated with those involved at CMS. Similarly, both ASCOBANS and ACCOBAMS are also considering MD. They jointly ran a workshop on this topic last year and ACCOBAMS ran another in April 2024<sup>6</sup>. IWC was represented at this meeting and its recommendations were reviewed and endorsed by the Scientific Committee.

There may also be opportunities to set up cooperative research with universities or other research institutions that are working on MD. For example, there has been liaison with the University of Sienna on this topic over the years in meetings of the SC and workshops. More recently the University of Exeter has also become involved. There may be opportunities with other research institutions to run joint projects and also to seek funds to support the research needed to address this issue.

In 2021, the UN Environment Assembly adopted Resolution “5/14” entitled “End plastic pollution: towards an international legally binding instrument”. This established the mandate to develop an international legally binding instrument on plastic pollution, including in the marine environment. This process and the eventual conclusions of the new binding instrument may well bring further opportunities for collaboration and support to the IWC’s work on MD. The ICG will continue to follow this closely.

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<sup>3</sup> “the Conservation Committee, Scientific Committee, and Whale Killing Methods and Welfare Issues Working Group to consider engaging, as appropriate, in pilot projects of other organizations or entities on marking of gear used in fishing activities that lead to cetacean entanglement.”

<sup>4</sup> This is enshrined in resolution UNEP/CMS/COP14/CRP27.2.1 available here: <https://www.cms.int/en/meeting/fourteenth-meeting-conference-parties-cms> .

<sup>5</sup> Resolution UNEP/CMS/COP14/CRP27.1.2 available here: <https://www.cms.int/en/meeting/fourteenth-meeting-conference-parties-cms> .

<sup>6</sup> Recommendations from that workshop are available here: [https://www.ascobans.org/sites/default/files/document/asc-acc\\_md-ws\\_recommendations.pdf](https://www.ascobans.org/sites/default/files/document/asc-acc_md-ws_recommendations.pdf)

Finally in the context of collaboration, the IWC now has an MoU in place formally with the Global Ghost Gear Initiative (<https://www.ghostgear.org/>) and the ICG will explore opportunities to work with this organisation during the intersessional period.

## 5. Deliverables and budgetary implications

Further to the passing of the marine plastic pollution resolution at the last Commission meeting, there was no specific funding provided to take the work forward. Hence, the work conducted to date has been conducted by members of the SC and CC and the Secretariat in essentially a voluntary capacity.

The ICG suggested the following deliverables and these were discussed at the last SC meeting.

- Full literature survey to fully identify the latest knowledge about the interactions between cetaceans and marine plastics with consideration of the identification of 'hotspots'. This might be achieved by a consultancy to a post-doctoral researcher or similar;
- Possible modelling work to look at hotspot identification. Consideration could be given to using the "IWC Effects of Pollutants on Cetacean Populations (SPoC) Model"<sup>7</sup> and the "IWC Contaminant Mapping Tool".
- Development of either a stand-alone IWC MD Database or the development of this as a component of another IWC database.

It is noted that IWC Secretariat staff time would be needed in support of these endeavours.

No budget request is made from the ICG.

## 6. References

Baulch, S. and Perry C. (2014) Evaluating the impacts of marine debris on cetaceans. *Marine Pollution Bulletin* 80 (1-2): 210-221.

Denuncio P, Bastida R, Dassis M, et al. (2011) Plastic ingestion in Franciscana dolphins, *Pontoporia blainvillei* (Gervais and d'Orbigny, 1844), from Argentina. *Marine Pollution Bulletin* 62(8):1836-41. doi: 10.1016/j.marpolbul.2011.05.003

de Stephanis R, Giménez J, Carpinelli E, et al. (2013) As main meal for sperm whales: Plastics debris. *Marine Pollution Bulletin* 69(1-2): 206-214. doi: <https://doi.org/10.1016/j.marpolbul.2013.01.033>

Eisfeld-Pierantonio, S.M., Pierantonio, N., Simmonds, M.P. (2022) The impact of marine debris on cetaceans with consideration of plastics generated by the COVID-19 pandemic, *Environmental Pollution*, Volume 300: 118967, ISSN 0269-7491, <https://doi.org/10.1016/j.envpol.2022.118967>

Fossi, M.C., Bains, M. and Simmonds, M.P. (2020) Cetaceans as ocean health indicators of marine litter impact at global scale. *Front. Environ. Sci.*, 8: 255, 10.3389/fenvs.2020.586627

IWC (2020) Report of the IWC Workshop on Marine Debris: The Way Forward, 3 - 5 December 2019, La Garriga, Catalonia, Spain (Workshop Report No. SC/68B/REP/03)

Richardson, K. et al. (2019) Building evidence around ghost gear: Global trends and analysis for sustainable solutions at scale, *Marine Pollution Bulletin*, 138: 222-229, ISSN 0025-326X

Roman, L., Schuyler, Q., Wilcox, C., et al. (2020) Plastic pollution is killing marine megafauna, how do we prioritize policy to reduce mortality? *Conservation Letters* 14:e12781. doi: <https://doi.org/10.1111/conl.12781>

## 7. Contributions of the ICG to the implementation of Resolution 2022-1

Please see below the operative parts of the resolution and comments from the ICG.

Resolution 2022-1 was adopted unanimously during IWC68 in 2022 and conveys which priorities the Commission sees on its work regarding marine debris in the foreseeable future.

We especially note the following paragraphs and identify possible actions the ICG could take to support their implementation:

**Operational paragraph 2:** “DIRECTS the Secretariat to explore options for the IWC to engage as a stakeholder within the INC process, as appropriate”

Comment: the ICG is closely following this process and would be pleased to help in this.

**Operational paragraph 4:** “DIRECTS the IWC Secretariat to explore ways to increase collaboration and cooperation with relevant international organisations and bodies to share information that contributes to the development of effective measures to prevent or mitigate marine plastic pollution impacts on cetaceans, avoiding unnecessary duplication of work and regulation and in addition to action encouraged in Resolution 2018-3”

Comment: the ICG notes, in particular, the work ongoing by ACCOBAMS on marine debris including where at a recent workshop members of the IWC ICG/SC took part and the subsequent endorsement of the recommendations of this workshop by the SC. Additionally, we note the relevance of the new CMS workstream to consider Fish Aggregation Devices as a source of marine debris, which we will continue to follow very closely. See section 4 above.

**Operational paragraph 5:** REQUESTS the Scientific Committee to develop an approach to be considered by the IWC that would assess the current knowledge of the impact of marine plastic pollution on cetaceans and would provide a global risk assessment that identifies ‘hotspots’ of cetacean exposure to plastic debris

Comment: This request was the focus of the discussions in the ICG and subsequently in the SC. Outcomes of this discussion will be presented via a separate paper from the SC leadership – the ICG has not been able to review this yet but looks forward to assisting in whatever process is agreed.

**Operational paragraph 6:** ENCOURAGES the Conservation Committee, Scientific Committee, and Whale Killing Methods and Welfare Issues Working Group to consider engaging, as appropriate, in pilot projects of other organizations or entities on marking of gear used in fishing activities that lead to cetacean entanglement

Comment: the ICG has progressed recommendations on gear marking. Suggested new action: a survey should be made of the gear marking work being done by other organisations with a mind to seeing if and how IWC might contribute or otherwise learn from this.

**Operational paragraph 7:** RECOMMENDS Contracting Governments to report relevant information, such as status, reduction, recycling and reuse efforts, on marine plastic pollution and plastic ingestion in stranded animals in their voluntary conservation and national Scientific Progress reports;

Comment: The ICG is available to assist in a review of the national reporting tools to assist in the implementation of this OP.

**Operational paragraph 8:** RECOMMENDS the IWC Secretariat to add marine debris mapping to its engagement with the Important Marine Mammal Areas (IMMAs) process;

Comment: The ICG is in discussion with the IMMAs leadership about this.

**Operational paragraph 9:** REQUESTS the Secretariat to develop a strategy for the IWC to reduce the use of single-use plastics as much as possible in all meetings and the day-to-day operations of the Secretariat;

Comment: The IWC Secretariat could report back on this, the ICG is available if support is further needed.

**Operational paragraph 10:** REQUESTS the Secretariat to report back to IWC69 on progress made in the implementation of this Resolution, including an assessment of financial forecast for this resolution for the next biennium.

Comment: The ICG could assist in this.



## **Annex 1. Report of the Scientific Committee**

Here are the relevant excerpts from the SC report:

### **“3.5 Review of Commission resolutions from 2022**

At IWC68, the Commission passed Resolution 2022-1 which contains the following operative paragraph: ‘REQUESTS the Scientific Committee to develop an approach to be considered by the IWC that would assess the current knowledge of the impact of marine plastic pollution on cetaceans and would provide a global risk assessment that identifies “hotspots” of cetacean exposure to plastic debris’.

In response to this request, through the Environmental Concerns Subcommittee, the Committee developed and discussed a considerable body of information from the Marine Debris Intersessional Correspondence Group (ICG) and members of the Committee. However, the proposed approach to address the Resolution could not be completed at SC69B, and so, the Committee **agrees** the following.

The Chairs and the Head of Science, Conservation and Management (HoSCM), together with the Marine Debris ICG, will consult with appropriate experts within and outside the Committee to complete the Committee’s response to this Resolution. This response will include scientific objectives, data requirements, analytic approach, costings, as well as anticipated outputs and timelines. A document authored by the Chair and Vice-Chair of the Committee, and reviewed by appropriate experts, will be submitted to IWC69 as a Commission Plenary Paper.”

And later in the report this -

### **“14.6 Marine debris**

#### *14.6.1 Develop programme to address Commission Resolution on Plastics*

The ICG on marine debris (see Item 14.6.2) offered an approach for addressing the potential impacts of marine plastics on cetacean populations that focuses on the following:

1. The completion of a carefully focused review of the effects of marine debris on cetaceans, which gives specific attention to the various definitions and location of hotspots of interaction between cetacean populations and marine debris;\*
2. The development of the IWC marine debris database;\*
3. A virtual meeting of experts to further develop approaches to risk assessment in the context of the risk posed by marine debris to cetaceans; and
4. Development of a strategy to help reduce the contribution made by fishing gear to marine debris, including a gear-marking questionnaire.

(\*Funding will be needed)

The Committee welcomes the work of the ICG on Marine Debris and notes that this continues to be an escalating issue both in terms of research interest and conservation implications. The Committee supports the request for funding a literature review focusing on hotspots of marine plastic pollution and the development of an IWC marine debris database. Recalling the resolution text, the Committee reiterated the recommendation to Contracting Governments to report relevant information, such as status, reduction, recycling and reuse efforts, on marine plastic pollution and plastic ingestion in stranded animals in their voluntary conservation and national Scientific Progress reports and noted that it could be a useful preliminary step to inform a future global risk assessment that identifies ‘hotspots’ of cetacean exposure to plastic debris.

In addition, the Committee highlights the important set of recommendations from a recent ACCOBAMS workshop regarding the impact of marine debris on cetacean populations, endorses these recommendations (Annex G, appendix 2) and looks forward to working with them.

The Committee **agrees** that river systems are frequent hotspots for marine debris and should be considered as a threat to riverine cetaceans. It was also noted that many hotspots of marine plastic debris are offshore where research is lacking. Modelling approaches may help to predict potential areas of debris accumulation to address data gaps offshore and in under-researched areas. It was highlighted that the IUCN Joint Marine Mammal Protected Areas Task Force is identifying Important Marine Mammal Areas (IMMAs), which can be used for mapping potential overlap of marine mammal and marine debris hotspots.

Finally, the Committee **recognises** that Fish Aggregating Devices (FADs) contribute marine plastics to the ocean environment that could adversely interact with cetacean populations and individual cetaceans. The Committee **recognises** the risk that FADs pose to cetaceans through the generation of marine debris and entanglement and encourages countries to consider this risk before authorising the use of FADs.

The Committee reiterated the recommendation to Contracting Governments to report relevant information, such as status, reduction, recycling and reuse efforts, on marine plastic pollution and plastic ingestion in stranded animals in their voluntary conservation and national Scientific Progress reports and noted that it could be a useful preliminary step to inform a future global risk assessment that identifies ‘hotspots’ of cetacean exposure to plastic debris.”

We also note that a paper (SC/69B/E/17) reported on plasticiser contaminants in a population of Amazon river dolphins (*Inia geoffrensis*) and that marine debris was also addressed in one of the recommendations endorsed by the SC that originated with the chemical pollution intersessional group:

*“Justifying and implementing urgent actions to reduce plastic production and use because of the role of plastic debris as a carrier for the enhanced transfer of chemical pollutants that are adsorbed on it and included in its composition (plastic additives).”*

The full report of the Environmental Concerns Subcommittee (Annex G) contains some further details of the discussions around marine debris and can be found here: <https://archive.iwc.int/pages/search.php?search=%21collection73&k=>

And the following is in the workplan for the ICG in Annex G

Topic	Intersessional	Next Meeting	Intersessional	Subsequent Meeting
Marine Debris* (*marine = aquatic to include rivers, bays, etc.)	Follow up on recommendations, adapt ToR (ICG-10), develop work plan for SC response to Commission resolution 2022-1 (highest priority); (SC2185, SC2265)	Review progress; finish work plan for Commission re resolution 2022-1	Continue work to follow up on recommendations . Implement work plan re resolution 2022-1	Review progress