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Bonn, Germany, 1-3 July 2014
Agenda Item 10.4

# MANAGEMENT OF MARINE DEBRIS

Summary

UNEP/CMS/Resolution 10.4 on Marine Debris instructed the Scientific Council to undertake three reviews; these are presented to the Meeting as:

(a) UNEP/CMS/ScC18/Inf.10.4.1: Migratory Species, Marine Debris and its Management
(b) UNEP/CMS/ScC18/Inf.10.4.2: Marine Debris and Commercial Marine Vessel Best Practice
(c) UNEP/CMS/ScC18/Inf.10.4.3: Marine Debris Public Awareness and Education Campaigns

The Executive Summaries containing the key findings and recommendations of the three reviews are annexed to this document (Annexes 2, 3 and 4). A draft resolution developed on the basis of these recommendations is included as Annex 1 to this document.

# MANAGEMENT OF MARINE DEBRIS

*(Prepared by the UNEP/CMS Secretariat)*

1. UNEP/CMS/Resolution 10.4 on Marine Debris instructed the Scientific Council to:

(a) Identify knowledge gaps in the management of marine debris and its impacts on migratory species;
(b) Identify best practice strategies for waste management used on board commercial marine vessels, taking into account the extensive work being undertaken by the IMO, FAO and the ISO to avoid duplication, identify existing codes of conduct and determine the need for the improvement and/or development of new codes of conduct;
(c) Facilitate an analysis of the effectiveness of current public awareness and education campaigns to identify gaps and areas for improvement; and
(d) Report progress and developments to the Conference of Parties as appropriate.

2. Thanks to a voluntary contribution by the Government of Australia, the Secretariat was able to support the Scientific Council with this task by hiring a consultant. A call for tender was issued in June 2013, and the UK-based consulting firm Eunomia Research and Consulting Ltd. was selected in August 2013.

3. The comprehensive reviews were produced in close consultation with the Secretariat and presented to the Scientific Council through the online workspace for its assessment in early March 2014. The revised versions produced on the basis of the comments received have been made available to this Meeting as:

(a) UNEP/CMS/ScC18/Inf.10.4.1: Migratory Species, Marine Debris and its Management
(b) UNEP/CMS/ScC18/Inf.10.4.2: Marine Debris and Commercial Marine Vessel Best Practice
(c) UNEP/CMS/ScC18/Inf.10.4.3: Marine Debris Public Awareness and Education Campaigns

4. The Executive Summaries containing the key findings and recommendations of the three reviews are annexed to this document (Annexes 2, 3 and 4). A draft resolution developed on the basis of these recommendations is included as Annex 1.

***Action requested:***

The Scientific Council is invited to:

(a) Review the draft Resolution on Management of Marine Debris as contained in Annex 1 to this document.

(b) Endorse it for submission by the Scientific Council to CMS COP11.

(c) Take note of the key findings of the reviews as presented in Annexes 2, 3 and 4 to this document.

(d) Decide whether to submit the reviews contained in UNEP/CMS/ScC18/Inf.10.4.1, Inf.10.4.2 and Inf.10.4.3 to CMS COP11.

**ANNEX 1**

**DRAFT RESOLUTION**

**MANAGEMENT OF MARINE DEBRIS**

*Recalling* CMS Resolution 10.4 on Marine Debris and *reiterating* the concern that marine debris has negative impacts on many species of migratory marine wildlife and their habitats;

*Aware* that entanglement in and ingestion of marine debris are both conservation and welfare concerns;

*Acknowledging* the substantial work on this subject being undertaken by other regional and global instruments;

*Further acknowledging* actions undertaken by States to reduce the negative impacts of marine debris in waters within their jurisdiction;

*Noting with gratitude* that the extensive reviews called for in CMS Resolution 10.4 have been carried out with financial support from the Government of Australia;

*Recognizing* that information on marine debris remains incomplete, especially regarding the quantity present in the ocean and entering the ocean annually, as well as its sources, pathways, prevalence in different sea compartments, and fate in terms of fragmentation, decomposition, distribution and accumulation;

*Concerned* that currently available information is not sufficient in order to understand which species are the most affected by marine debris, and what effects marine debris has at the population level, especially the specific effects of marine debris on migratory as opposed to resident species;

*Emphasizing* that preventing waste from reaching the marine environment is the most effective way to address this problem;

*Further emphasizing* that despite the knowledge gaps relating to marine debris and its impacts on migratory marine wildlife, immediate action should be taken to prevent debris reaching the marine environment;

*Aware* that a significant proportion of marine debris is the result discharges of ship-generated waste and cargo residues into the sea, and that the protection of the marine environment can be enhanced significantly by reducing these;

*Recognizing* that a range of international, regional and industry-based measures exist to manage waste on board commercial marine vessels and prevent the disposal of garbage at sea, but that regulatory gaps remain and enforcement of regulations is a challenge; and

*Conscious* that a wide range of target audiences needs to be addressed through effective public awareness and education campaigns in order to achieve the behavioural change necessary for a significant reduction of marine debris;

*The Conference of the Parties to the*
*Convention on the Conservation of Migratory Species of Wild Animals*

1. *Welcomes* the reports on Management of Marine Debris published as UNEP/CMS/ScC18/Inf.10.4.1, Inf.10.4.2 and Inf.10.4.3, which cover (i) Knowledge Gaps in Management of Marine Debris; (ii) Commercial Marine Vessel Best Practice; and (iii) Public Awareness and Education Campaigns;

2. *Encourages* Parties that have not yet done so to join other relevant Conventions such as MARPOL Annex V and the London Convention, to join Protocols to Regional Seas Conventions on Pollution from Land Based Sources, and to include the prevention and management of marine debris in relevant national legislation;

3. *Requests* the Parties to engage with other global marine initiatives such as the UNEP's Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA-Marine), the Regional Seas Programmes, the Global Partnership on Marine Litter (GPML), the Global Partnership on Waste Management (GPWM), and the Honolulu Commitment and the Honolulu Strategy on marine debris;

*Knowledge Gaps in Management of Marine Debris*

4. *Requests* Parties to establish monitoring programmes that give particular regard, using standardized methodologies, to the prevalence of all the types of debris that may, or are known to, have impacts on migratory species; sources and pathways of these types of debris; geographic distribution of these types of debris; impacts on migratory species, within and between regions; and population level effects on migratory species;

5. *Strongly encourages* Parties to implement cost-effective measures for the prevention of debris, such as levies on single-use carrier bags, deposit refund systems for beverage containers and obligations for the use of reusable items at events;

6. *Encourages* Parties to establish public awareness campaigns in order to assist in preventing waste from reaching the marine environment and set up management initiatives for the removal of debris, including public beach clean-ups;

7. *Calls upon* Parties to incorporate marine debris targets when developing marine debris management strategies, including targets relating directly to impacts on wildlife, and to ensure that any marine debris management strategies plan for and carry out evaluation;

8. *Encourages* Parties to use National Reporting mechanisms for Family Agreements to submit data related to the impacts of marine debris on migratory species relevant to the Agreements;

9. *Further encourages* the Scientific Council, with support from the Secretariat, to promote the prioritization of research into the effects of microplastics on the species ingesting them, and support research on the significance of colour, shape or plastic type on the likelihood of causing harm, in order to be able to focus management strategies in future;

10. *Invites* the Secretariat to work with the UNEP Regional Seas Programme to support standardization and implementation of methods for studies monitoring impacts in order to

produce comparable data across species and regions that will allow robust ranking of debris types for risk of harm across different species groups;

11. *Requests* the Scientific Council, with support from the Secretariat, to further the Convention's work on the marine debris issue and investigate the feasibility of close cooperation with other biodiversity-related agreements by means of a multilateral working group;

12. *Further requests* that the Scientific Council establish a specific marine debris working group to develop the Convention's marine debris work, and consider whether a dedicated COP Appointed Councillor should be assigned;

*Commercial Marine Vessel Best Practice*

13. *Strongly encourages* Parties to close gaps in international legislation such as MARPOL Annex V, in particular concerning exemptions based on vessel size which should be tightened to include fishing vessels, as these are significant potential sources of marine debris at sea;

14. *Also strongly encourages* Parties to address the issue of abandoned, lost or otherwise discarded fishing gear (ALDFG), by following the strategies set out under Goal B of the Honolulu Strategy, and the FAO Code of Conduct for Responsible Fisheries;

15. *Encourages* Parties to implement market-based instruments as measures for preventing commercial shipping from disposing of garbage at sea;

16. *Further encourages* Parties to [require their shipping operators to sign up to measures such as the Clean Shipping Index, and to promote participation in marine environmental awareness courses for all seafarers] [to promote measures such as the Clean Shipping Index and marine environmental awareness courses among shipping operators];

17. *Invites* the United Nations Environment Programme to continue and increase its leading role in in acting as a moderator between the different stakeholders in the maritime industry, and facilitating coordination to enable best practice measures to be implemented;

18. *Encourages* shipping operators and other key industries involved with the international transport of goods to drive environmental demands, including adopting the indirect fees system in ports, supporting the improvement of port waste reception facilities in general, and implementing relevant ISO standards;

*Public Awareness and Education Campaigns*

19. *Strongly encourages* Parties to note the examples of successful campaigns provided in UNEP/CMS/ScC18/10.4.3 when considering campaigns to address the most pressing needs in their area of jurisdiction, and to support or develop national or regional initiatives that respond to these needs;

20. *Recommends* that Parties planning to implement regulatory measures or economic instruments in order to reduce the amount of waste entering the environment to accompany these with behavioural change campaigns aiding their introduction by communicating the rationale for introducing the measure, and therefore increasing the likelihood of support;

21. *Encourages* Parties and the Secretariat to cooperate with organizations currently campaigning on marine debris, and seek to engage organizations dealing with migratory species to promote campaigns and raise awareness of marine debris amongst their members;

22. *Further encourages* Parties, the Secretariat and stakeholders to develop marine debris campaigns of specific relevance to migratory species;

23. *Invites* industry bodies to promote debris prevention measures across their industries; and

24. *Calls on* campaign organizers to survey the campaign reach, message recognition and impact upon the target behaviour or levels of marine debris in order to evaluate the success of a campaign and readily share that information to enable future campaigns to be effective.

ANNEX 2


# Report I: Migratory Species, Marine Debris and its Management

## Review Required under CMS Resolution 10.4 on Marine Debris

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March 2014

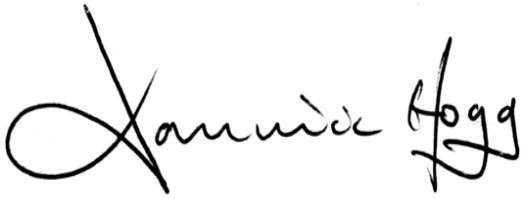
*Report for:*

The Secretariat of the Convention on Migratory Species

*Prepared by:*

Chris Sherrington, Chiarina Darrah, George Cole

*Approved by:*



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*Acknowledgements*

Our thanks go to Chris Carroll (IUCN) and Sue Kinsey (MCS UK) for their valuable cooperation and advice throughout this project.

*Disclaimer*

Eunomia Research & Consulting has taken due care in the preparation of this report to ensure that all facts and analysis presented are as accurate as possible within the scope of the project. However no guarantee is provided in respect of the information presented, and Eunomia Research & Consulting is not responsible for decisions or actions taken on the basis of the content of this report.

# EXECUTIVE SUMMARY

Eunomia Research & Consulting (Eunomia) has worked in partnership with the International Union for the Conservation of Nature (IUCN) and the Marine Conservation Society (MCS) to prepare three reports for the Convention on the Conservation of Migratory Species of Wild Animals (CMS) for 'Reviews required under Resolution 10.4 on Marine Debris'. The three reports are as follows:

- Report I: Migratory Species, Marine Debris and its Management;
- Report II: Marine Debris and Commercial Marine Vessel Best Practice; and
- Report III: Marine Debris Public Awareness and Education Campaigns.

## E1.0 Approach

Report I was undertaken principally, in accordance with UNEP/CMS/Resolution 10.4, to

> *"Identify knowledge gaps in marine debris management and impacts on migratory species"*

The report first outlines knowledge gaps regarding types, sources and pathways for marine debris, and its impacts on migratory species. Where possible, regional distinctions were made, and impacts were considered for the different high level species groups relevant to migratory species (i.e. mammals, reptiles, birds and fish).

Initially a brainstorming approach was used as a tool to explore the different potential item types, materials, sources, pathways and impacts of marine debris. The result was an inventory of possible characteristics of marine debris and its impacts. This allowed the extension of the subsequent literature review to explore currently un-documented or under-documented types and impacts of debris.

The literature review used academic and 'grey' literature to outline the present state of knowledge as regards these different aspects of marine debris and its impacts. The brainstorm and subsequent review were used to draw conclusions regarding which areas of the topic currently exhibit knowledge gaps.

A review was then undertaken on the management of marine debris, which included monitoring, removal and prevention strategies. Knowledge gaps with regard to these strategies were evaluated by reviewing both academic and grey literature, as well as other web-based sources of information.

Finally, challenges in the management of marine debris' impacts on migratory species were outlined and recommendations were made for opportunities for CMS to engage and assist in filling the identified knowledge gaps and overcoming the indicated challenges.

## E2.0 Key Findings

In "Origins and Pathways" (Section 2.0) the knowledge gaps regarding types of marine debris and their origins are assessed. Although there are many sources of data on marine debris, when considered globally, the key findings are:

- There is very limited information available regarding debris prevalence by source and pathway;
- Information regarding prevalence of marine debris by material type is not collected systematically in most regions, even where there is monitoring effort;
- There is slightly better information available regarding the prevalence of marine debris by item type. However, some key types, particularly microplastics, are not yet included in systematic monitoring attempts;
- Monitoring of prevalence of debris types in different marine compartments such as the sea bed, the water column and the surface is poor relative to the monitoring of beach debris;
- There are no robust data regarding the amount of debris in the ocean or how much enters the ocean each year;
- There are not yet robust data regarding the geographical distribution of debris or its distribution between marine compartments;
- The fate of debris in terms of fragmentation, decomposition, distribution and accumulation is not well characterized;
- Knowledge of these characteristics of marine debris is constrained both by methodological limitations and uneven geographical distribution of monitoring and research effort; and
- Studies in different geographical regions and sea compartments currently tend to produce incomparable data because standardized methods either do not exist or are not applied.

In "Impacts on Migratory Species" (Section 3.0) the current state of knowledge regarding the impacts of marine debris on migratory species are surveyed and knowledge gaps assessed. The key findings, in terms of knowledge gaps, are as follows:

- There is not enough quantitative information on the prevalence of impacts within populations to understand which species are the most affected by marine debris;
- The mechanisms and extent of harm associated with sublethal impacts of marine debris are poorly characterized;
- Interaction between sublethal impacts of marine debris and other stressors are unknown;
- The reporting of impacts does not take into consideration measures of animal welfare;
- There are almost no data on the population level effects of marine debris;
- The specific effects of marine debris on migratory as opposed to resident species are poorly understood;
- Further research would be needed to establish if associations between vulnerability to marine debris and life history stage or habits warrant targeted approaches;
- Absence of evidence regarding debris impacts generally reflects uneven allocation of monitoring resources rather than regional distinctions; and

- Impact studies currently tend to produce incomparable data because standardized methods do not exist.

Additionally, the contribution of different types of debris to the different impacts is evaluated. It is found that:

- The scoring of impacts according to marine debris type is not undertaken on a sufficiently comparable basis to allow robust ranking of debris types for risk of harm across different species groups and impacts, even though some trends within specific impact types are evident;
- Scoring is likely to be biased towards conspicuously identifiable items;
- The effect of microplastics on the species ingesting them is not yet fully characterized; and
- Apart from a few specific examples (such as items designed specifically for catching wildlife, or soft plastics) the effects of colour, shape or plastic type on the likelihood of causing harm are not well enough understood to warrant focussing of management strategies at present.

In "Management of Debris in Marine Ecosystems" (Section 4.0) knowledge gaps specific to monitoring, removal and prevention of debris are considered.

Concerning monitoring and with particular regard to migratory species, the following areas were found to have significant gaps:

- Prevalence of all the types of debris that may, or are known to, have impacts on migratory species;
- Sources and pathways of these types of debris;
- Geographic distribution of these types of debris;
- Impacts on migratory species, within and between regions; and
- Population level effects on migratory species.

The kind of information gaps most relevant to the impacts on migratory species as regards debris removal management initiatives are:

- Efficacy in terms of impact on stock and flow of marine debris;
- Efficacy in terms of mitigating impacts on marine species, specific to migratory species if possible;
- Efficacy in terms of public awareness and behaviour change – whether regarding the public, fishermen, industry, and other stakeholders; and
- Cost-effectiveness.

Regarding preventing waste reaching the marine environment, there are a number of aspects of the different strategies that are as yet poorly characterized. The key areas are:

- Effectiveness in terms of flow of marine debris;
- Effectiveness in terms of impacts on marine species, specific to migratory species if possible; and
- Cost-effectiveness.

However, preventative measures focused on land-based sources will inevitably reduce the amount of debris reaching the marine environment in the first place, and these should be pursued even in the absence of more robust information.

Economic instruments and other measures preventing litter (such as deposit-refunds on beverage containers, and levies on single-use carrier bags) have the added benefit of tackling the disamenity impacts of litter on land, which given the identification of emerging evidence on *indirect* costs of litter in respect of crime and mental health, are considerable. Therefore the benefits are not just of relevance to the marine environment. In the context of uncertainty regarding sources of marine debris, they are 'no regrets' measures with a range of additional benefits. Focus should also be directed on management strategies that deal with debris known to be of high impact on marine species – such as fishing gear, soft plastic and (micro)plastic fragments. The numbers we do have on debris abundance also suggest that prevention must be addressed before removal can be effective.

This report also reviewed the jurisdictional, legislative and financial challenges in the management of marine debris. The jurisdictional challenges relate to the transboundary nature of both marine debris and migratory species. There are a number of relevant multilateral agreements that could provide an adequate framework for tackling marine debris such as

- The Convention on Migratory Species itself,its Family Agreements and MoUs relevant to marine species
- The UNEP Regional Seas Conventions and Action Plans (RSCAPs);
- MARPOL Annex V;
- The London Convention; and
- UNEP's Global Programme of Action for the Protection of the Marine Environment from Land-Based Activities (GPA-Marine).

However each of these has significant gaps in coverage, for example:

- Only around 60% of countries with a coastline are Parties to the Convention on Migratory Species, Family Agreements or MoUs with relevance to a marine species. This leaves many range states for marine migratory species outside the influence of the Convention with regard to marine debris;
- RSCAPs do not cover every marine region, with the South West Atlantic, North West Atlantic and the northerly parts of the Pacific not included. Some of the Regional Seas do not yet have legally binding Conventions detailing how Regional Action Plans will be implemented. Not all countries within RSCAPs have ratified the existing Protocols relevant to marine debris. RSCAPs also do not cover landlocked countries which may be contributing to marine debris via estuarine litter;
- Many countries are not parties to MARPOL Annex V or the London Convention (for more detail, see Report II). These Conventions only address at-sea sources of debris;
- Many countries do not yet have action plans for the implementation of GPA-Marine, which covers land based sources of debris; and

- Addressing marine debris already present in the high seas is outside the scope of any of these agreements, and there are limitations to how effective they are at controlling the activities of flag vessels on the high seas.

With the exception of the high seas, the different agreements are otherwise able to complement each other to provide full coverage of the issue geographically and in terms of sources of debris, but in order to do so they must be ratified by every relevant country.

In terms of the legislature itself, the main problems are that agreements or action plans:

- Are generally not legally binding;
- Often lack specific mention of marine debris; and
- Usually lack a mechanism for enforcement.

Because there are few legally binding instruments regarding marine debris at the national level, enforcement issues are exacerbated.

Financially, the mandatory and voluntary contributions available to conservation-related Conventions are of a scale suitable for supporting strategic actions, such as those covered in the Recommendations below. However, filling knowledge gaps requires sustained concerted effort and funding, and obtaining this kind of funding is in itself one of the greatest conservation challenges. Some suggestions regarding funding sources have been made in Section 6.4.2.

# E3.0 Recommendations

The challenges for the management of marine debris are many. The following opportunities for the Convention on Migratory Species to assist in overcoming these have been identified. The recommendations have been prioritized according to the rationale that global frameworks are an important foundation for action, but concrete management actions are needed to reduce impacts of marine debris; Parties to the Convention are the principal actors in this regard and finally, that land based activities are the predominant source of debris.

Parties and Signatories could

- Address their commitments under the Convention relevant to marine debris and/*or* implement relevant provisions of Conservation Plans by:
  - Implementing specific actions directly such as
    - Deposit-refund schemes;
    - Levies on single-use carrier bags;
    - Obligations for the use of reusable items at events; and
    - Marine debris awareness and action campaigns.
  - Engaging with other global marine initiatives such as:
    - GPA-Marine – including completion of GPA-Marine National Plans of Action, and to ensure these have specific mention of marine debris;

- Regional Seas Programmes – including conclusion of specific Protocols on protection of the marine environment from land-based activities, and completion of Regional Action Plans either containing specific mention of marine debris, or completion of a specific Action Plan exclusively on marine debris;
- The Global Partnership on Marine Litter (GPML);
- The Global Partnership on Waste Management (GPWM); and
- The Honolulu Commitment and the Honolulu Strategy on marine debris.

- Ratifying other relevant Conventions such as MARPOL Annex V and the London Convention;

- Amend, if necessary, existing Action Plans to make more specific reference to marine debris.
- Appoint a dedicated Councillor for Marine Debris to the Scientific Council.

The Scientific Council, with support from the Secretariat of CMS and where applicable the assistance of the Secretariats and Coordinating Units of relevant Family Agreements and MoUs could:

- Propose that Parties appoint a dedicated Councillor to the Scientific Council and establish a specific marine debris working group to develop the Convention's marine debris work;
- Co-operate with other biodiversity-related agreements such as the UNEP Regional Seas Conventions, the Convention on Biological Diversity or the International Whaling Commission to establish an approach to encourage Parties to tackle marine debris, via an inter-convention working group;

The Secretariat could:

- Expand the network of organisations it works with to include as great a variety of stakeholders with relevance to marine debris as possible. UNEP RSCAPs are a high level example; on a smaller scale field projects could be used to engage with stakeholders of particular relevance to or having particular contact with migratory species;
- Co-ordinate, encourage the creation of, or give endorsement to, marine debris campaigns of specific relevance to migratory species;
- Remind Parties of their commitments under the Convention with relevance to marine debris; i.e. the commitment to conserve habitats and reduce the impacts of activities that endanger species or impede migration;
- Remind MoU Signatories of the elements of agreements they have made relevant to marine debris such as the protection of species and conservation of habitats;
- When future Agreements and Action Plans are developed, encourage that these contain specific reference to marine debris in;

- Endeavour to increase the number of Parties to the Convention, especially coastal nations;
- Strive to ensure that all the countries relevant to Family Agreements and Memoranda of Understanding with relevance to marine species respectively become Parties of or Signatories to these agreements;
- Use all of the fora it participates in to make policy-makers aware that marine debris is an important issue, and therefore:
    - Marine debris should be included in relevant legislation;
    - Funding should be provided for measures; and
    - Enforcement mechanisms should be put in place.

Based on the extensive research conducted outlining what is, and what is not known about marine debris and its impacts on migratory species, the following recommendations were made for opportunities the Convention could assist in regarding filling the identified knowledge gaps.

Parties to the Convention or Family agreements should;

- Participate in marine debris monitoring programmes in the Regional Seas areas; Parties in Regional Seas areas that have not yet assessed current status should be encouraged to implement marine monitoring strategies;
- Plan for and carry out evaluation of any marine debris management strategy undertaken and make the data available to the Secretariat, especially if carried out under the auspices of the Convention or Family Agreements.

Parties to Family agreements could:

- Use National Reporting mechanisms for Family Agreements to return data related to the impacts of marine debris on migratory species relevant to the Agreements;

The Secretariat of CMS could:

- Develop the CMS Initiative on Marine Debris further so it can provide a framework for helping to co-ordinate scientific research programmes on debris and migratory species by;
    - Facilitating the sharing of information relevant to marine debrisand research programmes between Family Agreements;
    - Supporting impact monitoring and its standardization by encouraging cooperation between organizations that carry out this kind of monitoring;
- Support the standardization of monitoring in partnership with the Regional Seas Programmes. IOC/UNEP and Regional Seas guidelines are a good foundation for this standardization. It is important for the management of marine debris and its impacts on marine species that:
    - Both weight and count be recorded;
    - Microplastics monitoring is implemented; and

- Monitoring of impacts on marine species should be implemented where possible.

- Use the return of information about marine debris under the request to Parties made in CMS resolution 10.4, item 6, as an opportunity to focus attention on, and request data which are deemed necessary in the future;
- Support where possible the development of a relational database to translate information on marine debris into risk presented to wildlife; and
- Support the setting of marine debris targets, which encourages the implementation of monitoring programs. These targets should include targets relating directly to impacts on wildlife.

Secretariats and Coordinating Units of relevant Family Agreements and MoUs could

- Request partner organizations such as NGOs or research groups to give access to much needed data;

As a final and overarching recommendation regarding the issue of marine debris, it is considered very important that CMS Parties or any other stakeholder do not delay actions to prevent debris reaching the marine environment in the first place, while information gaps are filled. Care must be taken to discriminate against strategies and tactics that are ineffectual or counterproductive. However sufficient information is available to be sure that the recommended actions on marine debris will have a positive effect on marine debris and its impacts.

ANNEX 3


# Report II: Marine Debris and Commercial Marine Vessel Best Practice

## Review Required under CMS Resolution 10.4 on Marine Debris

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March 2014

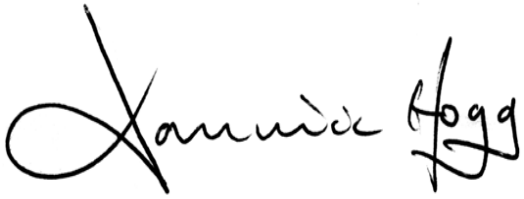
*Report for:*

The Secretariat of the Convention on Migratory Species

*Prepared by:*

Chris Sherrington, Clare Pitts-Tucker

*Approved by:*



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*Acknowledgements*

Our thanks go to Chris Carroll (IUCN) and Sue Kinsey (MCS UK) for their valuable cooperation and advice throughout this project.

*Disclaimer*

# EXECUTIVE SUMMARY

Eunomia Research & Consulting (Eunomia) has worked in partnership with the International Union for the Conservation of Nature (IUCN) and the Marine Conservation Society (MCS) to prepare three reports for the Convention on the Conservation of Migratory Species of Wild Animals (CMS) for 'Reviews required under Resolution 10.4 on Marine Debris'. The three reports are as follows:

- Report I: Migratory Species, Marine Debris and its Management;
- Report II: Marine Debris and Commercial Marine Vessel Best Practice; and
- Report III: Marine Debris Public Awareness and Education Campaigns.

Based on an extensive review of peer reviewed and grey literature, Report II identifies and evaluates the existing measures employed to manage waste on board commercial marine vessels and prevent the disposal of garbage at sea. Such measures include:

- Conventions;
- Legislation;
- Codes of conduct;
- Guidelines; and
- Best practice strategies.

These are categorised into international, regional, and industry / vessel based measures in Section 2.0 of the report.

Enforcement of such measures is essential to guarantee compliance, a precursor to ensuring their effectiveness. However, 'policing the seas' is one of the most challenging aspects in relation to improving waste management practices employed at sea. Enforcement mechanisms for existing measures are based on inspections and fines, where an organisation responsible for enforcement is in place and has sufficient resource. The issue of enforcement is explored further in Section 3.0.

Establishing the effectiveness of measures is also important in order to identify those which have the greatest impact and should be promoted as best practice. Key factors affecting the effectiveness of measures include the degree of participation, how well the measure is implemented, the cost of implementation, and the relevant enforcement mechanism (if any). Whilst these factors are discussed in Section 4.0, accurately establishing the effectiveness of the measures described in Section 2.0 is extremely difficult due to the significant lack of information regarding the existing baseline volume and dispersion of marine debris. This would need to be addressed in order for the impact of measures to be fully identified, thus providing a better understanding of the measures that have the most potential to reduce the disposal of garbage at sea from commercial vessels.

Despite the implementation of international legislation, gaps still remain in the regulatory framework. Key gaps identified in Section 5.0 of this report relate to the scope of specific requirements within MARPOL Annex V, which do not cover fishing vessels, despite fishing vessels constituting a significant proportion of the global commercial shipping fleet and therefore a significant potential source of marine debris at sea.

Another area where legislation does not sufficiently address the problem is the cruise shipping industry. Cruise ships have the potential to generate wastes similar in volume and character to those generated in hotels. The majority of current legislation regarding pollution and shipboard waste was developed prior to the rapid growth of the cruise market, and

consequently no international legislation exists to address this large and growing industry as a significant potential contributor to marine debris at sea.

Marine debris remains a global problem and challenge. In 2005, UNEP concluded that: *"… marine litter is not a problem which can be solved only by means of legislation, law enforcement and technical solutions. It is a social problem which requires efforts to change behaviours, attitudes, management approaches and multi-sectorial involvement."*[1] The circumstances do not appear to have changed since 2005, as such the report's recommendations, fully described in Section 6.0, include:

- Specific improvements to existing legislation, particularly MARPOL Annex V:
  - Suggestions include implementing zero discharge at sea, phasing out on-board waste incineration, and providing improved and harmonised port reception facilities;
- Significant gaps to address, including:
  - Lack of baseline and monitoring data surrounding marine debris;
  - Education for seafarers;
  - Targeting improvements within the cruise shipping industry; and
- The potential introduction of market-based instruments, for example:
  - Offering appropriate tax relief or a reduction in port fees to ships or fleets that operate a zero waste discharge at sea policy.

The maritime industry is a complex sector with stakeholders to be engaged at all levels. These interdependencies between fuel suppliers, ship owners, cargo owners and financing and insurance companies mean that the implementation of best practice requires not only technological, but also social and organisational changes. Ensuring success calls for a multi-stakeholder approach; the crew and ship owner are important, but a number of other players in the maritime industry must also be involved. When thinking about incentives or possible actions that are to be included it is essential to ensure they are well targeted to actors that can, and importantly are willing, to make a difference. [2]

As in other spheres there is always a tendency to try and shift the responsibilities to others. An example is waste collection and treatment. Ship operators complain that ports do not offer reception facilities while ports claim that the crew of visiting ships do not deliver their waste in port. Without clear directions, problems – and associated solutions – will be put on the shoulders of others. [3]

UNEP, perhaps through the Regional Seas Programme, can facilitate coordination between all of the different stakeholders to enable best practice measures to be implemented.

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1 UNEP (2005) *Marine Litter: An Analytical Overview*, 2005

2 Seas at Risk (2007) *The Clean Ship Concept: A strategy for uncoupling growth in shipping from environmental harm*, accessed 10 October 2013, http://www.seas-at-risk.org/1mages/Seas%20At%20Risk%20Policy%20Analysis%20_V_W%20case%20study%201_.pdf

3 Seas at Risk (2007) *The Clean Ship Concept: A strategy for uncoupling growth in shipping from environmental harm*, accessed 10 October 2013, http://www.seas-at-risk.org/1mages/Seas%20At%20Risk%20Policy%20Analysis%20_V_W%20case%20study%201_.pdf

International forums such as the IMO take decisions on the basis of a consensus, which invariably means that large flag-States (particularly those acting as "open registry" for a large proportion of ships) have a loud voice and considerable influence. Therefore, the outcome of IMO deliberations may be somewhat lacking in ambition at times. It is important that key players are supported in promoting best practice and addressing the gaps identified to ensure improvements in international legislation and the global situation do not get overlooked, and UNEP, supported by CMS, can help provide this support.

To this end, CMS can encourage Parties to the Convention on Migratory Species to:

- Ratify key international legislation such as MARPOL Annex V (where CMS Parties have not yet done so);
- Initiate and support the improvement of MARPOL Annex V so that exemptions are tightened, in order to include most fishing vessels.
- Encourage ships and shipping operators from CMS Parties to sign up to measures such as the Clean Shipping Index;
- Encourage and support every seafarer to attend a marine environmental awareness course provided by ProSea or another similar organisation;
- Encourage shipping operators and other key industries from CMS Parties involved with the international transport of goods to drive environmental demands;
- Promote the wider rollout of the indirect fees system in ports, and support the improvement of port waste reception facilities in general; and
- Support and encourage CMS Parties to implement and achieve relevant ISO standards.

Many of the activities suggested here may involve approaching governments, industries and international organisations to facilitate research and explore funding potential for investigating how such actions could be best implemented. CMS may not be able to undertake all these activities alone, and so should support UNEP and the Regional Seas Programme to do so. Developing research questions around these topics and co-ordinating research to address information gaps is a good approach. For instance, initiating further research to investigate whether market based instruments are appropriate measures for preventing commercial shipping from disposing of garbage at sea. Additionally, identifying a strategy to target specific audiences and work with key industries in order to improve awareness, knowledge and behaviour with regards to marine debris would be beneficial. We recommend that one of the first industries to target would be the cruise ship industry, as they produce a significant amount of garbage at sea, therefore improving waste management and performance in this global industry would potentially have a large and beneficial impact.

Encouraging ratification of international legislation such as MARPOL is all well and good, but this report clearly shows that there are significant gaps that need to be addressed if the legislation is to become more effective. Therefore one of the key recommendations for CMS Parties and the Secretariat is to focus on the gaps identified in this report and explore the possible means to address them.

ANNEX 4


# Report III: Marine Debris Public Awareness and Education Campaigns

## Review Required under CMS Resolution 10.4 on Marine Debris

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March 2014

*Report for:*

The Secretariat of the Convention on Migratory Species

*Prepared by:*

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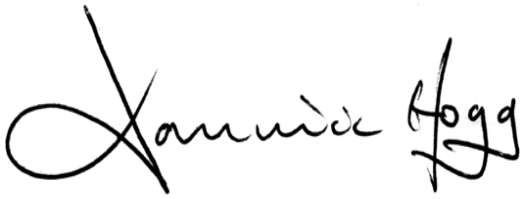
*Approved by:*



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*Disclaimer*

# EXECUTIVE SUMMARY

Eunomia Research & Consulting (Eunomia) has worked in partnership with the International Union for the Conservation of Nature (IUCN) and the Marine Conservation Society (MCS) to prepare three reports for the Convention on the Conservation of Migratory Species of Wild Animals (CMS) for 'Reviews required under Resolution 10.4 on Marine Debris'. The three reports are as follows:

- Report I: Migratory Species, Marine Debris and its Management;
- Report II: Marine Debris and Commercial Marine Vessel Best Practice; and
- Report III: Marine Debris Public Awareness and Education Campaigns.

The approach to gathering information for this report was based on a mind mapping of target audiences for public awareness and education campaigns, in relation to potential sources of marine debris. The target audiences and potential sources of marine litter were grouped into categories. An internet search was conducted using relevant key terms to identify at least one campaign for each of the target audience types, debris types and regional seas areas defined by the Regional Seas Programme. Selected case studies that demonstrate a focus on migratory species, multi-faceted approaches, and specific targeted campaigns are presented in Section 2.3.

Through undertaking an extensive search for a wide variety of campaigns targeting different audiences, four key gaps were identified:

1. Audience gaps;
2. Geographic gaps;
3. Species gaps; and
4. Debris type gaps.

## Further information on each of these gaps is discussed in Section 2.4.

Having identified a wide range of different campaigns targeting different audiences and types of marine debris across the world, naturally the next step would be to establish their effectiveness. From the information available it appears that campaigns targeting a specific audience and specific type of marine debris tend to have more success. However, information on the efficacy of the public awareness campaigns is sparse, and where it is available the analysis is in almost all cases conducted by the campaign organisers and therefore lacks independent and impartial authority. Our review of campaigns found that factors contributing to failure of campaigns are more difficult to identify.

We note, in this regard, that economic instruments described in Report I such as levies on single-use carrier bags and deposit-refunds for beverage containers, show strong debris-prevention impacts, drawing from a more robust evidence base. Accordingly, while we note the role that behavioural change campaigns can play, either in isolation or in tandem with regulatory measures or economic instruments, they are not a substitute for regulatory action. Behavioural change campaigns can, however, be useful in aiding the introduction of economic instruments and/or regulatory measures, by making sure that the public is aware of the rationale for introducing the measure, and therefore increasing the likelihood of support.

Bearing in mind the preference for economic incentives and/or regulatory measures, our key recommendation for CMS is to provide support for the successful campaigns identified within this report. We have identified a number of successful campaigns that target a specific type of marine debris and can easily be applied to different countries and locations. Campaigns

such as the Operation Clean Sweep program, the monofilament and fishing tackle capture and recycling campaigns, and the Beat the Microbead campaign are easily adapted to local requirements and have already been implemented in different locations. Support for these campaigns can be promoted to CMS Party and Signatory States through National Focal Points, the Conference of the Parties and the Standing Committee as well as through external networks. The CMS could also invite applications to the CMS small grants programme for funding for campaigns.

Promotion of the practices and achievements of site or industry specific measures, such as those undertaken by Maryland Port Administration and The Port of Oakland, may encourage other facilities to take steps of their own to minimise marine debris. Engaging industry bodies, such as the International Association of Ports and Harbours, the American Association of Port Authorities, the European Seaports Organization, the Association of Australian Ports and Maritime Authorities, and the Association of Canadian Port Authorities, may be a good way to promote measures across an industry, as has been seen in the plastics industry with Operation Clean Sweep.

It is logical to build upon existing networks and resources by working with organisations currently campaigning around marine debris and others who are stakeholders in the marine environment. CMS can seek to engage organisations invested in migratory species to promote campaigns and raise awareness of marine debris amongst their members.

There may also be opportunities to address the audience gaps identified in Section 2.4. However more research is needed to understand the relative importance of these sources of marine debris, the means of reducing marine debris and the potential for impact upon levels of marine debris in these areas.