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EXPERT WORKSHOP TO PREPARE PRACTICAL GUIDANCE ON PREVENTING AND MITIGATING THE SIGNIFICANT ADVERSE IMPACTS OF MARINE DEBRIS ON MARINE AND COASTAL MANAGEMENT AND HABITATS
Baltimore, 2-4 December 2014

# COMPILATION OF SUBMISSIONS BY PARTIES, OTHER GOVERNMENTS AND RELEVANT ORGANIZATIONS TO SUPPORT THE DISCUSSIONS OF THE EXPERT WORKSHOP TO PREPARE PRACTICAL GUIDANCE ON PREVENTING AND MITIGATING THE SIGNIFICANT ADVERSE IMPACTS OF MARINE DEBRIS ON MARINE AND COASTAL BIODIVERSITY

*Note by the Executive Secretary*

1. The Executive Secretary is circulating herewith a compilation of information in support of the CBD Expert Workshop to Prepare Practical Guidance on Preventing and Mitigating the Significant Adverse Impacts of Marine Debris on Marine and Coastal Management and Habitats.

2. This compilation consists of a list of reference materials that are directly relevant to the workshop objectives, selected from submissions from Parties and organizations in response to notification 2014-042,[1] dated 20 March 2014. The original reference materials are available at http://www.cbd.int/doc/?meeting=MCBEM-2014-03.

3. These reference materials are being circulated in the form and language in which they were received by the Secretariat of the Convention on Biological Diversity.

[1] Ref. no. SCBD/SAM/DC/JL/JA/JMQ/83342.

**Table 1. Reference materials related to experiences and activities in monitoring and addressing the impacts of marine debris**

| Submitter | Title | Description |
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| Columbia | Informe- Resumen de la contaminacion por residuos solidos hacia el mar en el departamento del atlantico<br><br>Report- Summary on the solid waste pollution in the sea and in the Atlantic department (in Spanish) | It is calculated that 18 million units of plastic enter the Caribbean Sea daily. This not only impacts dolphins and turtles, but it also has economic consequences in the fishing and tourist industries. In order to address the impacts of marine debris, it is suggested to continue the reuse and recycle process, introduce regulation to tax producers of plastic packaging (such as bottles and plastic bags), and to receive reliable data of solid waste effluents from the River Magdalena and is tributaries.[2] |
| Denmark | Analysis of marine debris ingestion by herring and whiting from the Northern Great Belt (in Danish)<br><br>Analyse af marint affald i sild og hvilling fra det nordlige Storebælt | The National Institute of Aquatic Resources, Technical University of Denmark has published a brief report on marine litter and its impacts on commercially-relevant fish as advice to the Danish Ministry of Environment. The report describes the results of a study where approx. 100 herring and whiting were analyzed for amount of ingested microliter. The study focused on litter in the 0,5-5 mm size range. Approx. 30 % of examined herring and whiting from the Great Belt had ingested microlitter, with the majority being 0,5-4 mm fibres.[3] |
| European Union | Overview of EU policies, legislation, and initiatives related to marine litter | The document presents an overview of relevant European Union legislation, policies and strategies that address the problem of marine debris. Also, an indication of ongoing and future initiatives is outlined. |
| European Union | Public Consultation on Marine Litter- An Analysis | This document outlines the results of the public consultation on marine litter that was initiated by the European Commission. The aim of the consultation was to understand stakeholders' views on a range of possible actions and policies which could be undertaken to tackle the problem of marine debris. Additionally, the results will be used as one of the bases for formulating an EU-wide quantitative headline reduction target for marine debris. |
| European Union | Guidance on Monitoring of Marine Litter in European Seas | This document was prepared by the Marine Strategy Framework Directive (MSFD) Technical Subgroup on marine litter. The document aims to provide EU Member States with recommendations and information to begin monitoring marine litter under the MSFD. The specific protocols addressed therein relate to the collection of data of beach |

[2] The submission is provided in Spanish. This description applies to the submitted information that is relevant for the objectives of the workshop.
[3] The submitted report is written in Danish.

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| | | litter, floating litter, seafloor litter, litter in biota and microliter. |
| European Union | Marine Litter Watch Application | This app aims to collect data on marine litter on beaches relevant for the MSFD to support official monitoring, with the help of interested citizens and communities. It also allows the collection of data from non-official initiatives such as clean-ups. |
| Germany | Issue Paper to the "International Conference on Prevention and Management of Marine Litter in European Seas" | The Issue Paper to the "International Conference on the Prevention and Management of Marine Litter In European Seas" (convened in 2013) was prepared with the aim of outlining questions and key information to provide a basis of information from which discussions could build. The paper presents best practice examples and parties' commitments, including contact points to reduce the input of marine litter, or to reduce the amount of litter already present in the marine environment. The conference also aimed to support the establishment, further development, and achievement of coherence of Regional Action Plans (RAPs) on marine litter for the regional seas surrounding Europe. |
| Italy | Impacts of Marine Debris on Marine and Coastal Biodiversity and Habitats: Some specific topics | The submission gives an overview on the impacts of marine debris on marine and coastal biodiversity and habitats. It touches on negative impacts such as entanglement and ingestion and also addresses the implication of marine debris and sea turtles. Also, the submission outlines the impact of abandoned, deliberately discarded or lost fishing gear. It is highlighted that it is assumed that the major damage from this source of marine debris comes from cages trap that are placed on the seafloor. |
| New Zealand | Information Note | The submission of New Zealand address the disposal of waste in New Zealand's waters, rules restricting the disposal of garbage in these waters, clean-up activities and preventative actions and also a survey of fishermen about lost fishing gears.<br><br>Disposal of waste in New Zealand's waters is managed under both domestic and international legislation. Waste disposal within 12 nautical miles is regulated under the Resource Management Act 1991 and the Marine Pollution Regulations 1998. Waste disposal beyond the 12 nautical mile limit in New Zealand's exclusive economic zone is administered by Maritime New Zealand under the Maritime Transport Act 1994.<br><br>New rules restricting the disposal of garbage (or marine debris) from ships, pleasure craft and offshore installations came into force on January 1, 2013. The Marine Protection Rule (parts 170 and 200), were amended to give effect to Annex V (Regulations for the Prevention of Pollution by Garbage from Ships) of the Convention for the Prevention of Pollution from Ships (MARPOL). The changes tightened limits on disposal of garbage at sea and apply operational requirements (such as the use of placards, garbage management |

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| | | plans and record books) to a wider range of ships and offshore installations. Plastic, ropes, fishing gear, plastic garbage bags, plastic-derived incinerator ashes, cooking oil, dunnage, lining and packing material that floats, papers, glass, metal, bottles, crockery and similar refuse are all banned for disposal at sea. Dumping water containing cleaning agents or additives that are harmful to the marine environment is also prohibited. Finally, lost fishing gear must be reported if it poses a significant threat to the marine environment or a navigation hazard.<br><br>Sustainable Coastlines is a New Zealand charity that coordinates and supports large-scale coastal clean-up events, educational programs, public awareness campaigns and riparian planting projects. So far, they have presented to 96,000 people (mainly school students) on marine pollution issues, and 33,000 people have attended beach clean-ups around New Zealand, collecting over 135 tonnes of rubbish. The 5 most commonly collected items were microplastic pieces 200,000; food wrappers 158,000; bottle caps 90,000; plastic bags 89,000; polystyrene 82,000.<br><br>Preventative actions have also been taken, such as through the New Zealand Government's Waste Minimisation Fund and work with private businesses. For example is Flight Plastics' new plastic packaging plant, which opened in early 2014, is the country's first plastic packaging plant to manufacture food grade PET packaging from recycled PET (RPET) flakes.<br><br>Surveys of fishermen have highlighted that lost fishing gear is frequently encountered, but there is very little data about the scale of this problem, despite the threat it poses to marine life and ship safety. |
| Nigeria | Information Note | On-ship generated solid wastes include glass, paper, cardboard, aluminium, steel cans and plastics and can be either hazardous or non-hazardous . Solid waste that enters the ocean may become marine debris, and can then pose a threat to marine organisms, humans, coastal communities, and industries that utilize marine waters. Cruise ships typically manage on-board solid wastes by a combination of source reduction, waste minimization and recycling. Litter/garbage from other vessels is already being managed by Nigeria by implementing Annex V of the MARPOL Convention which deals with the prevention of garbage pollution from ships. As part of the obligation arising out of the convention, the Nigerian Ports Authority (NPA), the Nigerian Maritime Administration and Safety Agency (NIMASA), and other relevant agencies of the government put in place adequate waste reception facilities from on board generated waste. |

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| | | For land-based litter management, NIMASA has been carrying out awareness campaigns in coastal communities, and has recently developed a marine litter clean up component for the programme. This implies demonstration projects that aim to create awareness of the issue of the ocean's limited capacity for waste disposal. However, as of yet there is no direct official study on the impacts of marine litter that could be cited in this brief.<br>Additionally, there is a collaboration proposal with UNEP-GPA and NIMASA on awareness creation on marine litter and formulation of a National action plan on marine litter management. |
| Poland | Ecological effects of ghost net retrieval in the Baltic Sea<br>Pilot Project: Collecting ghost nets Final Report | The project "Removal of the Ghost Nets from the Baltic Sea" was realized by WWF Poland in 2012, and has been completed with the aid of the private foundation Baltic Sea 2020. One of the objectives of the project was to undertake activities aimed at cleaning the Baltic Sea in Polish and Lithuanian territorial waters from lost nets, including gear retrieval actions at sea (trawling), in cooperation with fishermen. Within the scope of the project a total of 21,275 kg of ghost nets were removed, 1,400 kg from Lithuanian waters and 19,875 kg from Polish waters. One of the results of the project is an interactive database of likely locations of underwater hooks (shipwrecks, rocks, other obstacles), which may cause damage to fishing gear that could lead to marine debris. The database is available in three languages: Polish, English and Lithuanian, and is available online (sieciwidma.wwf.pl). At present there are 333 objects in the database, 233 of which have been forwarded by the Hydrographic Office of the Polish Navy at the end of 2013 as a part of an information exchange. The removal of ghost nets from the Baltic Sea is planned to continue within the frameworks of the Operational Programme "Fisheries and Sea", as well as with other sources of financing, in Poland and in other Baltic states. |
| USA | Response Protocols for Biofouled Debris and Invasive Species Generated by the 2011 Japan Tsunami<br>-Outcome of the Regional Preparedness and Response Workshop to Address Biofouling and Aquatic Invasive Species on Japan Tsunami Marine Debris | An examination of the policy and strategies taken for the marine debris that occurred after the Japanese Tsunami. The Response Protocols include communication (risk assessment prior to the tsunami), Reporting, Science response and risk management, management response, and finally post tsunami communications. |

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| USA | Survey and Impact Assessment of Derelict Fishing Traps in St.Thomas and St.John, U.S. Virgin Islands | The project aimed to assess the causes and potential impacts of derelict fish traps, develop experiments to evaluate potential impacts and assess efficiency of AUVs as a tool to detect derelict fishing traps. |
| OSPAR (The Convention for the Protection of the marine Environment of the North-East Atlantic)[4] | Regional Action Plan for Prevention and Management of Marine Litter in the North-East Atlantic | The OSPAR Regional Action Plan for Prevention and Management of Marine Litter in the North-East Atlantic (OSPAR RAP) sets out the policy context for OSPAR's work on marine litter. It describes the actions of OSPAR for the coming years and provides a timetable to guide the achievement of these actions. The OSPAR RAP is organised in four sections. Section I outlines the objectives, geographical scope, principles, and approaches. Section II presents the actions to be implemented. The actions have been grouped in four themes: A. the reduction of litter from sea-based sources, B. the reduction of litter from land-based sources, C. the removal of existing litter from the marine environment and D. education and outreach. Section III describes the necessary monitoring and assessment. Finally, section IV refers to an Implementation Plan for the development and adoption of OSPAR's measures, supporting the implementation of OSPAR's actions in this agreement. It also outlines an implementation reporting format through which OSPAR's Contracting Parties, relevant stakeholders and observers are invited to report on implementation |
| Mediterranean Action Plan/UNEP | Regional Plan for the Marine Litter Management in the Mediterranean | The Regional Plan for the Marine Litter Management in the Mediterranean has entered into force in July 2014. It aims to reduce and prevent marine litter pollution and its impacts on ecosystem services and habitats in the Mediterranean, to a minimum. It also aims to remove existing marine litter to the lowest possible extent, and to enhance knowledge on the impacts of it. The Regional Plan is divided into five parts: general provisions (part I) such as objectives and principles, measures and operational targets (part II), assessment (part III), support for implementation (part IV) and final provisions (part V) such as the implementation table. |
| North-west Pacific Action Plan/UENP (NOWPAP) | NOWPAP Regional Action Plan on Marine Litter | The NOWPAPA Regional Action Plan on Marine Litter (RAP MALI)'s objective is to improve the quality of the marine and coastal environment of the Northwest Pacific by addressing the problem of marine debris through cooperation and partnership. RAP MALI implements its objective through three focal areas: first, the prevention of marine litter, second, the monitoring of marine litter and third, the removal of existing litter. The NOWPAP MALI addresses issues such as legal and administrative arrangements, land- |

[4] Submitted by UK

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| | | based and sea-based sources, information, education and public awareness and research activities. The NOWPAP MALI operates according to a work plan that was initially decided for the 2008-2009 biennium. Since then similar work plans have been adopted by the NOWPAP Member States for the 2010-2011, 2012-2013 and 2014-2015 biennium. |

**Table 2. Reference materials related to the impacts of marine debris on marine and coastal biodiversity and habitats**

| Title | Author(s) | Type of impacts and monitoring strategies | Type of Publication |
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| Are baleen whales exposed to the threat of microplastics? A case study of the Mediterranean fin whale *(Balaenoptera physalus)* | Fossi, M.C., Panti, C., Guerranti, C., Coppola, D., Giannetti, M., Marsili, L. and Minutoli, R. | Microplastic ingestion | Journal article |
| Untangled Marine debris: a global picture of the impact on animal welfare and of animal-focused solutions | Butterworth, A., Clegg, I. and Bass, C. | Impacts of several marine debris types on marine life, possible solutions | Report |
| Ingested plastic transfers hazardous chemicals to fish and induces hepatic stress | Rochman, C., Hoh, E., Kurobe, T. and Tee, S | Ingestion of plastic, transfer of hazardous chemicals | Journal article |
| Fishery gear interactions from stranded bottlenose dolphins, Florida manatees and sea turtles in Florida, U.S.A | Adimey, N., Hudak, C., Powell, J., Bassos-Hull, K., Foley, A., Farmer, N., White, L. and Minch, K. | Fishing gear interactions | Journal article |
| Increased plastic litter cover affects the foraging activity of the sandy intertidal gastropod *Nessarius pullus* | Aloy, B., Vallejo Jr, B., Juinio-Meñez, M. | Foraging behaviour of gastropods on garbage-impacted sandy beaches | Journal article |
| Damage to Cauliflower Coral by Monofilament Fishing Lines in Hawaii | Asoh, K., Yoshikawa, T., Kosaki, R. and Marschall, E. | Impacts of monofilament fishing lines on corals | Journal article |
| Incidence of marine debris and its relationships with benthic features in Gray's Reef National Marine Sanctuary, Southeast USA | Bauer, L., Kendall, M. And Jeffrey, C. | Correlation between marine debris and benthic organisms | Journal article |
| A sea of plastic: evaluating the impacts of marine debris on cetaceans | Baulch, S. and Perry, C. | Impact of marine debris on cetacean | Report |
| Impacts of lost fishing gear on coral reef sessile invertebrates in the Florida Keys National Marine Sanctuary | Chiappone, M., Dienes, H., Swanson, D. and Miller, S. | Impact of lost fishing gear on coral reef ecosystem | Journal article |
| Monitoring the impact of litter in large vertebrates in the Mediterranean Sea within the European Marine Strategy Framework Directive (MSFD): Constraints, specificities and recommendations | Galgani, F., Claro, F., Depledge, M. and Fossi, C. | Monitoring strategies | Journal article |
| Marine species mortality in derelict fishing nets | Gilardi, K., Carlson-Bremer, D., June, | Derelict fishing gear, cost/benefit of | Journal article |

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| in Puget Sound, WA and the cost/benefits of derelict net removal | J., Antonelis, K., Broadhurst, G. and Cowan, T. | derelict net removal | |
| Increased oceanic microplastic debris enhances oviposition in an endemic pelagic insect | Goldstein, M., Rosenberg, M. and Cheng, L. | Population impacts of microplastic on pelagic insects. | Journal article |
| Derelict fishing nets in Puget Sound and the Borthwest Straits: patterns and threats to marine fauna | Good, T., June, J., Etnier, M. and Broadhurst, G. | Impacts of derelict gillnets on marine fauna | Journal article |
| Environmental implications of plastic debris in marine settings: entanglement, ingestion, smothering, hangers-on, hitch-hiking and alien invasions | Gregory, M. | Synthesis of impacts of marine debris in marine environment | Journal article |
| Phase Shift from a Coral to a Corallimorph-Dominated Reef Associated with a Shipwreck on Palmyra Atoll | Work, T., Aeby, G. and Maragos, J. | Coral shifting and man-made materials | Journal article |
| Lobster trap impact on coral reefs: effects of wind driven trap movement | Lewis, C., Slade, S., Maxwell, K. and Matthews, T. | Lobster traps impact on coral reefs | Journal article |
| Life in the "Plastisphere": Microbial Communities on Plastic Marine Debris | Zettler, E., Mincer, T. And Amaral-Zettler, L. | Microbial communities on microplastic | Journal article |
| Species of special concern in U.S. waters | Marine Mammal Commission (independent organization of the US government) | Effects of human activities, including marine debris on species and populations of marine mammals | Annual Report |
| Understanding the co-occurence of large whales and commercial fixed gear fisheries off the west coast of the United States | Seaz, L., Lawson, D., DeAngelis, M., Petra, E., Wilkin, S. and Fahy, C. | Whale entanglement, fishing techniques | Report |
| Ingestion of fishing gear and entanglements of seabirds: monitoring and implications for management | Philips, R., Ridley, C., Reid, K., Pugh, P., Tuck, G. and Harrison, N. | Impacts of fishing gear on seabirds | Journal article |
| Long-term effects of a ship-grounding on coral reef fish assemblages at Rose Atoll, American Samoa | Schroeder, R., Green, A., DeMartini, E. and Kenyon, J. | Effects of ship-grounding on coral reef | Journal article |
| Cetaceans and Marine Debris: The Great Unknown | Simmonds, M. | Overview on impacts and effects of marine debris on cetaceans | Journal article |

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| Ten years after the crime: lasting effects of damage from a cruise ship anchor on a coral reef in St.John, U.S. Virgin Islands | Rogers, C. and Garrison, H. | Long-term impacts of dropped anchor on coral reefs | Journal article |
| Anthropogenic marine debris in the coastal environment: a multi-year comparison between coastal waters and local shores | Thiel, M., Hinojosa, I., Miranda, L., Pantoja, J., Rivadeneira, M. and Vásquez, N. | Marine debris in the coastal environment | Journal article |
| Assessment of Management to Mitigate Anthropogenic Effects on Large Whales | Van der Hoop, J., Moore, M., Barco, S., Cole, T., Daoust, P.-Y., Henry, A., McAlpine, F., McLellan, W., Wimmer, T and Solow, A. | Anthropogenic impacts on whales, including marine debris and the effectiveness of implemented policies | Journal article |
| US Atlantic and Gulf of Mexico Marine Mammal Stock Assessments- 2012 | Waring, G., Josephson, K., Maze-Foley, K. and Rosel, P. | Stock assessment of marine mammals including reference to impacts of marine debris | Report |
| Effects of prolonged entanglement in discarded fishing gear with substantive biofouling on the health and behavior of an adult shortfin mako shark, *Isurus oxyrinchus* | Wegner, N. and Cartami, D. | Effects of derelict fishing gear on mako shark | Journal article |
| Pribilof Islands northern fur seal entanglement in marine debris from 1995-2003 | Williams, M., Rodrigues, R., Williams, B., MacLean, S., Zavadil, P. and Lestenkof, A. | Entanglement of seals | Report |
| Beach condition and marine debris: new hurdles for sea turtle hatchling survival | Triessnig, P., Roetzer, A. and Stachowitsch, M. | Impact of marine debris on hatching turtles | Journal article |

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