

# **Recommendations for a coordinated plan to reduce litter in inland waters, ports, on coastlines and in the ocean**



**Working Group on litter in the aquatic environment  
Grenelle de l'Environnement**

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# Introduction

Litter in inland aquatic and marine environments can be defined as all material or objects made and used by man which are directly or indirectly, voluntarily or involuntarily thrown and/or abandoned in the aquatic environment. It is considered that marine litter is a solid waste, which is visible to the naked eye. Therefore, with this in mind, the working group does not go beyond this scope, yet the international scientific community proved recently that at the end of its life cycle, waste disintegrates into microscopic plastic particles. Furthermore, lost packaging can contain toxic liquid or gaseous substances.

The predominance of production and utilisation of disposable and persistent materials, the demographic growth of populations living by the sea and along waterways, and the development of maritime transport and fishing activities on the ocean all lead to globalisation and standardisation of waste in the marine environment reaching the Arctic, the atolls, Antarctica and estuaries of densely populated rivers. Some trawling nets in the North Sea catch more waste than fish. French continental and overseas coastlines are particularly affected because of their length, France's transit position and several estuaries and short coastal rivers which act as flow evacuation devices and finally because of sea current specificities.

Hurricanes, floods and other climate hazards are powerful distributors of litter in the oceans and on the coastlines. Colonisation of floodplains or areas liable to flooding by humans and the forecast of climate change forebode an increase of this type of pollution.

It is widely accepted in the international bibliography that about 70% of waste found in the sea and along the coast come from land-based sources and that the remaining part originates from maritime activities. According to the reference documents, this percentage varies by about 10%. In the Wider Caribbean the percentage of terrestrial wastes would be close to 90%. On the European Atlantic front, around 75% of waste observed are made out of plastic or polystyrene, 7% is sanitary waste such as cotton buds, condoms or tampon applicators and 2% is metallic waste. In the Mediterranean, the proportion of plastics adds up to 75%.

Litter in aquatic environments degrade the landscape and its amenities. Marine biodiversity, particularly mammals and commercial species are confronted with ecological traps and lures created by litter. Litter can expose populations and the food chain to sanitary risks and have negative effects on the quality of the water and on habitats. They adversely affect navigational security and professional fishing activities. Upstream, they represent a financial and technical burden for the administrators of navigable waterways and downstream for the communities that finance the cleaning up of the shore. An important international historical bibliography is already available on the subject especially concerning the marine environment.

Furthermore, removal of the polluted foreshore often implies the extraction of large quantities of sand that in time modifies the geomorphology of the coastline thus leaving it vulnerable to erosion. The foreshore also plays a key ecological role in marine and land biodiversity.

It is for these reasons that after the commitment 91 Grenelle de l'Environnement (a French environmental summit round table) in October 2007, the Operational Wastes Committee strongly recommended the definition of «Recommendations for a coordinated plan to reduce litter in inland waters, ports on coastlines and in the ocean». « This plan should involve the public, managers of waste, fishermen and other concerned professions, as well as the world of shipping with due regard to the International MARPOL Convention on "safe secure and efficient shipping on clean oceans". For these reasons article 30 of the draft legislation relative to the implementation of the Grenelle de

l'Environnement, which was adopted during its first reading by the Assemblée Nationale and the Senate, stipulates in its current version that « All the measures shall be put in place to reinforce the battle against illegal practices, reduce pollution at its source and to prevent maritime pollution including maritime litter and floating wastes... ».

The working group responsible for defining this coordinated plan met on 6 occasions between December 2008 and April 2009 under the chairmanship of the Association Robin des Bois (see details of the participants in annex 1). Exchanges and meetings with French and international institutions and associations enhanced the work of the group. The meeting minutes available on the internet<sup>1</sup> constitute an important base of practical, scientific and photographic information and a stepping stone towards a large number of National and International sources.

Confronted with the complexity of waste in the aquatic environment, the variety of origin, of pollutions, of constituents, this plan calls for coordinated actions combined with a gradual reduction, it also calls for a general integrated management approach and solidarity between upstream and downstream issues when considering water basins.

Furthermore this plan calls for solidarity between sea and land when considering waste of marine origin. The implementation of this plan will help to achieve the target objectives of the Water Framework Directive and the Marine Strategy Framework Directive.

The reduction of packaging and the ecological conception of products were not addressed by the working group. The scope of the working group was already broad yet it is clear that advances in these two areas will also contribute to the reduction of waste in the aquatic environment and the subsequent pollution.



Dangerous marine litter © Robin des Bois

MEEDDAT:

Ministère de l'Écologie, de l'Énergie et du Développement Durable et de l'Aménagement du Territoire  
(Minister of Ecology Sustainable Development and Planning)

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<sup>1</sup> Work in progress [http://www.robindesbois.org/macrodéchets/feuille\\_de\\_route.pdf](http://www.robindesbois.org/macrodéchets/feuille_de_route.pdf)

CR 1<sup>st</sup> reunion [http://www.robindesbois.org/macrodéchets/GT\\_DMA\\_CR1\\_V2.pdf](http://www.robindesbois.org/macrodéchets/GT_DMA_CR1_V2.pdf)

CR 2<sup>nd</sup> reunion <http://www.robindesbois.org/macrodéchets/GT-DMA-2DEF.pdf>

CR 3<sup>rd</sup> reunion [http://www.robindesbois.org/macrodéchets/GT\\_DMA\\_CR3.pdf](http://www.robindesbois.org/macrodéchets/GT_DMA_CR3.pdf)

CR 4<sup>th</sup> reunion [http://www.robindesbois.org/macrodéchets/GT\\_DMA\\_CR4.pdf](http://www.robindesbois.org/macrodéchets/GT_DMA_CR4.pdf)

CR 5<sup>th</sup> reunion [http://www.robindesbois.org/macrodéchets/GT\\_DMA\\_CR5.pdf](http://www.robindesbois.org/macrodéchets/GT_DMA_CR5.pdf)

# I – Current Knowledge

## A- The environmental impacts

### 1 Water basins and the sea

The harmful effects of waste have a global impact on the ocean and damages biodiversity, habitats and their amenities and fishing and navigation security. The current state of knowledge is sufficient to consider the effects of waste as a global threat to inland waters and marine environment notably for French overseas shorelines, which are particularly sensitive and threatened by waste dumps. However more knowledge is required including a greater in-depth understanding of issues in particular to better apprehend the chemical, bacteriological and ecological effects to inland waters and to the marine environment as well as customary application of the Water Framework Directive.

Regroup and develop research on the impacts of marine litter and the toxic substances and invasive species associated with riverine and sea inputs.

## B- Economical impacts

### 2 Water basins and the sea

The cost of this type of waste needs to be quantified, for example the cost to local authorities of collecting and treating waste, damage to propellers or to fishing gear and the decrease of frequentations to tourist sites.

Carry out studies of economical impacts in certain communities subject to a particular risk of waste accumulation and regroup on a national basis information on economical impacts to local communities, Maritimes Affaires, ship owners, fishing committees, federations of user groups, Health and Safety affairs (DASS)<sup>2</sup> and all other concerned bodies.

## C- Inventory

### 3 Water basins and the sea

In fresh water, waste collection is carried out by civil engineering managers working on dams and docks, professional and recreational fishermen, by professional reintegration associations and also, among others, NGOs. In France there is no recovery or analysis of information concerning the waste collected in water basins as is currently occasionally carried out for the marine environment. On shore, the quantification and qualification protocols of litter collected are numerous; the observation protocol of the OSPAR<sup>3</sup> Convention, which should be carried out 4 times a year, permits a macro-regional survey yet it is not adapted to the daily work of teams working on the field. The pioneering protocol MerTerre/ODEMA<sup>4</sup> is considered to be too complicated when it comes to taking into account routine observations.

Currently, several marine litter identification manuals are already available and are regularly updated on a global basis especially in the North East Atlantic under the governance of the OSPAR Convention and the UNEP<sup>5</sup>.

Information gathered on site is a useful technique to monitor the efficiency of waste reduction efforts, detect new emerging categories and to become aware of eventual pernicious efforts caused by the Domestic Waste Tax related to weight, and finally to organize proper planning.

For the structures carrying out the daily collection on European coastlines a new simple and harmonised protocol on the quantification and the qualification of waste collected in fresh water and on the coast, which would take into account local sites specificities, should be set up. Designate an organisation to coordinate with the necessary tools and financial means (CEDRE<sup>6</sup>, ONEMA<sup>7</sup> ...) responsible for the collection, the synthesis and the interpretation as well as the diffusion of data provided by local communities, by professional reintegration associations and all other relevant participants.

<sup>2</sup> DASS Direction des Affaires Sanitaires et Sociales

<sup>3</sup> OSPAR Commission for the protection of the North East Atlantic

<sup>4</sup> Observatoire des Déchets en Milieux Aquatiques (Observatory of Waste in Aquatic Environments)

<sup>5</sup> United Nations Programme for the Environment

<sup>6</sup> Centre de Documentation, de Recherche et d'Expérimentations sur les Pollutions Accidentelles des Eaux (Center for Documentation, Research and Experimentation on Accidental Water Pollution)

<sup>7</sup> Office National de l'Eau et des Milieux Aquatiques (The French National Agency for Water and Aquatic Environment)

#### 4 Water basin

The participation of France in the pilot project from the OSPAR Commission for the protection of the North East Atlantic addressing the surveillance of waste on beaches was coordinated by the CEDRE, and decreased in 2007 due to financial issues and a lack of feedback on the information gathered. France's commitment to issues related to marine litter within the framework of the Biodiversity Committee and the sub-group on the impact of Human Activities in the OSPAR environment was reinforced in 2009 and should remain high thereafter.

Assign to an organisation such as the CEDRE or IFREMER the responsibility of counting and reporting marine litter within the framework of the OSPAR Convention and other international governing and regulating bodies and guarantee on a long term basis the necessary financial contribution especially via the MEEDDAT<sup>8</sup>.

#### 5 Water basin

IFREMER<sup>9</sup> carried out operations of surveillance of marine litter along the bottom of the continental shelf in the high seas. Other organisations could ultimately participate on the surveillance of waste on surface waters in these areas. These studies should be extended and coordinated to improve knowledge especially when keeping in mind the target of a good ecological state of the marine environment established by the Marine Strategy Framework Directive 2008/56.

Develop a quantitative and qualitative follow up of litter on the surface and on the seabed, on the continental shelf, by targeting as a priority, Marine Protected Areas and the high seas, in line with International law and in collaboration with voluntary teams from commercial vessels, fishing groups, recreational activities and the navy. This should be carried out with all the available technologies such as satellites, planes and sub-marine robots.



Waste floating in a port environment © Robin des Bois

<sup>8</sup> Ministère de l'Écologie, de l'Énergie et du Développement Durable et de l'Aménagement du Territoire (Minister of Ecology Sustainable Development and Planning)

<sup>9</sup> Institut Français de Recherche pour l'Exploitation de la Mer (French Research Institute for Exploitation of the Sea)

# II- Regulation

## A) National regulation

### 6 Water basins, land-sea and sea interface

Article R 632-1 of the Penal Code concerning the throwing of waste in public domain establishes a fine of 150 Euros. Article L216-6 makes one liable to a fine of 75,000 Euros and a two-year jail sentence for throwing or abandoning waste in large quantities in the inland waters or in the ocean within territorial limits. A captain committing an infraction to Annex V of the International Convention MARPOL<sup>10</sup> by throwing waste at sea is liable according to article L218-15 of the Environmental Code to a fine of 200,000 Euros and a one-year jail sentence. Marine litter in the ocean are “wrecks” as defined by legislation December 26<sup>th</sup> 1961 which establishes the system of maritime wrecks and waste as defined by legislation Directive 2006/12/EC April 5<sup>th</sup> relative to waste of the European Union.

The origin and the juridical status of waste recuperated in the ocean or on coastlines are therefore numerous. This waste could originate from polluters who escape French and European regulations. As a general rule, litter originates from unknown bodies and litter management should be carried out by non-producing entities.

Clarify the liability regime, the legal status of aquatic litter and related pollution, harmonise applicable penalties and modify Article L216-6 by removing the terms « large quantities ». Alert police authorities so that the applicable penalties concerning every illegal dumping of waste is applied with the same diligence given to parking fines.

### 7 Water basin

In spite of information distributed by communities, for example, via municipality bulletins, internet sites and other media, certain members of the public dispose of diverse waste such as tires, gravel, plastic films originating from agricultural use, and old electric household appliances on public land notably along rivers. The signalling, « dumping prohibited », « disposal not allowed » are not manifestly deterring even when they are visible.

Reinvent sign posting and enforce regulations and penalties for offenders when they are identified, especially repeat offenders. Remind, mayors and local authorities that they have a responsibility to collect and eliminate waste.

### 8 Water basins and land-sea interface

It has been put forward during the working group that complaints concerning illegal deposits of waste are generally not addressed. However, some attorney generals are beginning to prosecute and this approach must be encouraged. The same situation and recommendations were expressed and presented in September 2007 during the Grenelle de l'Environnement regarding matters of river pollution by hydrocarbons and other toxic substances.

Inform representatives of state and town police, costal guards and magistrates of the economic, environmental and sanitary damages caused by dumping of waste and littering in order to induce them to act and to prosecute concerning this issue.

### 9 Water basin

It is acknowledged that transportation paths of domestic waste, destined to be stored, incinerated and/or recycled as well as the surroundings of these sites may be areas of scattering and accumulation of light wastes. Standard regulations from local governmental authorities such as “transportation modalities and positioning of waste must limit loss” are not sufficiently firm. The developments of grouping and recycling networks have considerably stretched average distances travelled by waste.

Reinforce application of legislation concerning the loss of waste in the various waste collecting, recycling, sorting and disposal networks particularly during road and waterway transportation.

### 10 Land-sea interface

Extraction operations of bottom sludge in port basins and navigation channels remobilise waste. In the case of mechanical dredging the extracted sludge are passed through a screen, which does not filter, waste less than 25 cm in size. In the case of hydraulic dredging frequent waste such as tin cans are sucked along with the sediments. In certain Mediterranean ports the waste in the sediments could reach up to 30% of total volume. Legislation only foresees that “the measures in order to limit the loss or disposal of waste must be implemented” (Order of February 23, 2001). The total volume dredged from the Atlantic coast is approximately 70 million tons per year in wet weight.

<sup>10</sup> Convention International Convention for the Prevention of Pollution from Ships

Evaluate waste volumes or fragments disposed of in marine areas by dredging and dumping operations into the sea, analyse the best methods to preliminarily remove waste before the sinking of the sediments, and modify legislation if necessary.

## B) International regulation

### 11 The ocean

Equivalent work such as that done by the OSPAR Commission in the North East Atlantic is not carried out in the Mediterranean and there is no quantitative or qualitative on going macro-regional follow up in the Mediterranean basin; the MEDPOL<sup>11</sup>, after 20 years of a stand still, will carry out a preliminary assessment on this subject. In the oriental Mediterranean basin marine litter is of particularly high density. This lack of supervision is also noted for French overseas territories. Only the PNUE through its regional programmes attempt to initiate the overseeing in these areas. France does not participate in the PNUE surveillance protocol in the Wider Caribbean.

Integrate waste into the priorities and long term programmes of the Barcelona Convention, the Union for the Mediterranean, MEDPOL and any other Convention, agreement, protocol or regional programme in the Mediterranean and to be applied in French overseas territories.

### 12 The sea

The loss of containers during maritime transport represents a source of cargo spreading that contributes to the input of waste and wrecks floating through the World Ocean or sinking to the depths of it. The ICS<sup>12</sup> and the WSC<sup>13</sup> of which the company CMA-CGM is a member have written a guide « Safe Transport of Containers By Sea – Guideline in best practices ». This guide aims to avoid loss of containers at sea. It presents existing legislation and preventive measures applicable to the different links of the chain of actors (road transporters, transit personal, loaders, crew...).

Within the International Maritime Organization the application and generalisation of recommendation of the guide « Safe Transport of Containers By Sea » dedicated to the management of containers and to simplify the distribution of this guide targeting all levels of land and maritime transport of containers.



Containers adrift © Marine Nationale

### 13 The sea

France has ratified the 1972 International Convention for Safe Containers yet not the 1993 amendment concerning identification of containers and the reinforcement of resistance tests. This amendment is considered by the « Safe Transport of Containers By Sea » guide as a security measure and therefore of reduction of losses at sea.

Have France ratify the 93 amendment to the Convention on Safety of Containers (CSC of the IMO Convention).

<sup>11</sup> Programme de surveillance continue et de recherche en matière de pollution de la mer Méditerranée

<sup>12</sup> International Chamber Of Shipping

<sup>13</sup> World Shipping Council

## 14 The sea

The loss of containers is not the only source of dispersal of cargo and waste in marine areas. Vehicles or trailers are loaded on decks they are filled with various objects, which occasionally fall at sea after storms and following poor securing methods. These loadings often take place on non European Community Flag ships, leaving European Community ports towards non European Community or non OECD<sup>14</sup> ports.

Reinforce state control at ports concerning matters dealt with by the provisions of the SOLAS Convention, in conformity with European regulations and particularly the modified 95/21 "Directive concerning the enforcement, in respect of shipping using Community ports and sailing in the waters under the jurisdiction of the Member States, of international standards for ship safety, pollution prevention and shipboard living and working conditions (port State control)".



The deck of the Krokus December 9<sup>th</sup> 2009 © Marine nationale/Abeille Bourbon

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<sup>14</sup> Organisation for Economic Co-operation and development

# III- Planification

## 15 Water basin

Overseas territories, which for the vast majority are islands and are subject to hurricanes and tsunamis have in general insufficient waste management programmes which expose the shoreline and the surrounding areas such as mangroves and lagoons to accumulate aquatic litter jeopardising the sanitary state of the water and also aquatic resources indirectly threatening tourist activities. This problem has already been identified by the State services and is subject to a specific clause in Article 49 of the draft legislation relating to the application of the Grenelle de l'Environnement.

To consider as a priority improvements in the field of collecting and dealing with waste in French overseas territories and make accessible the exchange of information and the knowledge obtained from worldwide island communities.

## 16 Water basin

Floods, storms, cyclones and other natural disasters produce a considerable increase of waste that could be reduced when the alarm has been sounded in advance via preventive measures.

Integrate waste into Prevention Plans of Natural Disasters especially those concerning floods in order to provide information to communities with measures to be taken in order to help travellers as well as permanent habitants and companies, put in place preventive measures to avoid the production and distribution of litter linked to the natural event. The second point is to put in place after the event alert systems a system for the collection of waste on the beaches and in the ocean.



The Texas coast near the path of hurricane Ike © Robert Kaufmann/FEMA

## 17 Water basin

The SDAGE<sup>15</sup> are currently being revised and will be adopted in September 2009. The issue of waste is far from being explicitly and systematically addressed.

Include waste as a source of pollution having an impact on sanitary and ecological state of water and habitats in SAGE<sup>16</sup>, SDAGE and river contracts.

<sup>15</sup> Schémas Directeurs d'Aménagement et de Gestion des Eaux (Outline for the Organisation of the Development and Management of water resources)

<sup>16</sup> Schémas d'Aménagement et de Gestion des Eaux

## 18 Water basin

The PDEDMA<sup>17</sup> (Departmental Plans for Disposal of household and similar wastes) and the PREDD<sup>18</sup> (Regional Plans for Disposal of Hazardous Waste) do not mention collected waste in main riverbeds, beaches or waste brought back by fishermen. The vast majority of this waste is domestic waste; however toxic waste can also sometimes be collected. The PDEDMA's are currently being revised.

Include in PDEDMA and PREDD the collection and management of waste in rivers, lakes, ponds and the seashore, particularly taking into account the state of knowledge in departments and regions of the seashore where water basins are exposed to flood risks.

## 19 Water basins and the sea

In water basins, on shorelines, including French overseas territories, and in the ocean, some areas are more likely to accumulate waste, creating a "natural" dump of anthropogenic waste. These ecological traps, of litter should be systematically cleared with care after floods. In the Pays Basque some nets to fish litter are deployed in river beds.

Create an inventory and a chart of areas which are most likely to accumulate aquatic litter in inland waterways, ports, harbours, on shorelines and in the oceans by mobilising the skills of hydraulic and current modelling along with the knowledge of field observers and workers. Modelise them and integrate them into regular collection schemes of local communities and other responsible entities, with logistic means best adapted to the sensitivity also and accessibility to the area. They should also be integrated in the database mentioned in the following proposal.



Areas of high accumulation along the River Seine. Photos SOS maldeseine and Robin des Bois



<sup>17</sup> Plan Départementaux d'Élimination des Déchets Ménagers et Assimilés (Departmental Plans for Disposal of household and similar wastes)

<sup>18</sup> Plans Régionaux d'Élimination des Déchets Dangereux (Regional Plans for Disposal of Hazardous Waste)

## 20 Water basins and the sea

Old unauthorised dumps and landfills along waterways, coastal cliffs and coastlines which are subject to erosion are the launching ramps of waste from different origins (domestic waste, miscellaneous junk, yard waste, litter ...).

Pool efforts and knowledge of Water Agencies, local communities, managers of navigable waterways, the National Chamber of inland waterways and ports, fishing and hunting federations, ecological and hiker, organisations water sports, the ADEME, environmental departments including all police departments, to provide regional information on internet databases of old illegal dumps. Organise at a regional level the technical and financial means to eliminate the dumps.  
→ See proposals 7 and 58.

## 21 Water basin

To reinforce river banks large amounts of synthetic geo-textiles are used. Their grip and structure are quickly jeopardised by the rapid colonization of vegetal life and flood regimes.

To reinforce river banks, use materials exclusively fabricated of natural fibres. When it is considered necessary by the competent authorities to use synthetic geo-textiles, check that they are regularly replaced and maintained to avoid their degradation into the environment.



Geotextiles from river bank consolidation 70% polypropylene, 30% polyethylene © SOS maldeseine

## 22 Upstream and downstream

Organised inland events such as the Tour de France, an annual bicycle race, and major water sport events generate an influx of visitors and thus waste. During these occasions, public spaces, farmland, natural environments and embankments are littered. A legislation is being drafted to study the impact of important boating events when they go through a Natura 2000 site.

For major events, include in the organisation and authorisation file, a plan to prevent and manage waste.



The quays in Rouen after the Armada festivities. © SOS maldeseine

# IV- Information

## 23 Water basin

Aquatic litter tends to drift. Every person along water basins should feel co-responsible for the health and ecological effects on the Mediterranean, the Bay of Biscay, the Channel, the North Sea and French overseas waters. Awareness campaigns for the general public on aquatic litter have been carried out on paper or are planned as part of Ocean Days. The campaigns are of a good quality, yet are not addressed to a very broad public and only occur during certain periods. They should be standardised and opened to a wider audience.

Promote during periods of large audiences national campaigns on diverse media supports such as "The river is not a dumping ground," "The street is not a dumping ground" co-financed by Regions, the State and concerned public or private contributors in cooperation with stakeholders on the field, NGOs and members of the World Ocean network.

## 24 Water basin

Waste, dumped by road commuters accumulates in ditches and gutters. They are mostly lightweight therefore during wet or windy conditions are likely to be transported towards aquatic environments. Cleanup operations carried out by farmers indicate that highways are not the only roadways infrastructures affected by abandoned waste.

Set up an educational information campaign and / or determine with the appropriate Ministries dealing with petrol stations, rest areas, at highway tolls, include in driving lessons and ask the professional road federations to inform their members of the environmental risks and of potential financial penalties.

## 25 Water basin

Beached marine litter and fragments of released balloons are important indicators of coastal pollution and are along with other threats a danger to marine and bird life. Latex balloons labelled "biodegradable" by manufacturers can take up to 5 years to break down. At the moment of its release, a balloon can be considered waste. Balloon releases are used for many occasion including weddings and celebrations at schools.

Via the Ministry of Education, the Association of the Mayors of France or other authorities inform on the environmental and legal risks of balloon releases.



© Robin des Bois

## 26 Water basin

Several fieldworkers reported a significant reduction of plastic bags since the ban on distribution of plastic bags at checkout counters of supermarkets. An abandoned biodegradable bag takes several months or years to disintegrate, depending on the polymers used to manufacture it, and the physico/chemical characteristics of the surrounding environment. Alternatives to plastic bags (carry baskets, knitted bags, reusable bags ...) have been put in place and are efficient in supermarkets. The same information process to distributors and to consumers should include small businesses.

Create a campaign promoting alternatives dedicated to shopping in small/local shops and concerning the remaining stock of single use shopping bags, whether biodegradable or not, make obligatory the mentioning of a ban on throwing them into nature.

## 27 Water basin and sea-land interface

Certain members of the public dispose of their waste in collection facilities. When the removal rate is not appropriate, waste accumulates around bins, which facilitates the passage into the aquatic environment; as a consequence the public is demotivated and therefore goodwill practices are discouraged.

Adapt waste collection to the frequentation of urbanised areas in particular when it concerns beaches, parking areas close to places of interest, areas around waterways with a lot of leisure activities, taking due account to the peaks of influx associated with good weather conditions, public availability and appropriate remarks from collection services.

## 28 Water basin and land-sea interface

Packaging and sachets from lollies, ice creams, lollipop sticks, cans, aluminium foil, sandwiches, bottles, individual servings, toys and greasy papers make up some of the waste left by tourists they are commonly found along roads, water banks and coastlines. Professional charters of the Chambers of Commerce and Industry are one of the appropriate bodies to encourage retailers to display information for their clients as well as awareness campaigns on Eco-packaging, ADEME<sup>19</sup> and the Ministry of Trade.

Encourage takeaway shops to carry out awareness and information campaigns on the prohibition of littering the packaging of bought products by mentioning incurred fines.



Candy wrappers and broken up plastic © Robin des Bois

## 29 Land-sea interface

Tourists tend to crowd along the shoreline, regrouping at the beach, and frequently picnicing. They are not all aware of the littering misdemeanour and have a tendency to think that the collection of waste in public maritime area is not their responsibility.

Encourage actors such as community groups and professionals to use waste collection trucks in coastal areas as a tool for a campaign reminding of incurred fines related to leaving garbage on the beach.

<sup>19</sup> French Environment and Energy Management Agency

# V- Specific flows

## A- Small floating litter

### 1) Small plastic floating litter



Stomach of an albatross from the Kure Atoll State Wildlife Sanctuary of Hawaii (USA) © Cynthia Vanderlip

#### a- Current knowledge

### 30 Water basins and the sea

The majority of litter is made out of plastic. This material continually fragments becoming smaller particles until eventually becoming "nano-plankton". Disintegration means that the surface of the marine litter is increasingly in contact with the environment therefore the particles are capable of adsorbing even more pollution present in the marine environment. The environmental consequences of this "miniaturization" are not well known whereas the particles fall into the food chain of marine organisms and bird species. Under the framework of the Convention OSPAR a three-year research project will be carried out by Plymouth University.

Develop in universities and organisations such as IFREMER, research programmes on the fragmentation of plastic, the effect and behaviour of small and microscopic plastic particles and additives to the food chain and to the habitat.

### 31 The sea

Small waste such as plastic pellets around a couple of millimeters in size which are a raw material used by the plastic industry are not included in any monitoring projects along coastlines or at sea. However they are an important indicator of the presence of marine litter.

Develop a quantitative and qualitative follow up in collaboration with national or international scientists or representatives of concerned industries of small waste such as plastic granules, pellets, plastic flakes and the degraded plastic packaging fragments in specific representative areas along the coastline. Carry out similar surveillance on industrial production sites in relation with Water Agencies and the DREAL<sup>20</sup> concerning the blocking of outlets.

<sup>20</sup> Direction Régionale de l'Environnement, de l'Aménagement et du Logement (Regional Direction of Environment, Development and Housing)

## b- Planning

### 32 Water basin

Small debris such as capsules, corks, caps, washers, lollipop sticks, lighters, blisters, sachets, condoms and other small floating objects thrown on the roadside and in public places are carried away by storms and by the cleaning of sidewalks and gutters with water. Wastewater facilities are not always equipped with screens to prevent "small particles" ending up in the aquatic environment. This category of waste is uncountable, its weight and volume are insignificant, yet it represents a major threat to the marine food chain. At sea they can be mistaken as plankton, eggs, fish larvae or organic debris. They can be compared to a bait without a hook and therefore are eaten by many marine and bird species.

Improve the pre-treatment and management of rainwater, in particularly in large cities.

→ Also see proposition 23

## c- Information

### 33 Water basin

If disposed of in the toilet, small floating waste can reach coastlines and the sea via sewage systems. This circuit should be avoided, especially during unusual episodes such as flood rains when the water systems, which collect sewage, can, following French legislation, be directed and discharged without treatment into the environment.

Through legal measures, require an indication or logo mentioning "it is prohibited to throw in the toilet" in a visible, understandable and systematic way on tampons, cotton swabs, disposable wipes, and other consumer goods packaging which may find their way into the environment due to buoyancy and size.

Washed up debris/litter and hygienic/sanitary a tampon applicator on the foreshore

© Robin des Bois



### 34 Water basin

During rainy periods sewage and storm water are routed towards storm-water tanks becoming a single drainage system. If the equipment is standard, filtering is carried out before the effluent is redirected towards the treatment plant.

Alert designers, builders, managers of waste water drainage systems whether public or private, as well as staff, about the conception, the engineering, the size, and maintenance of screens as well as the management of residues in filters in order to improve the technology and function.

### 35 Water basin

Production, transport, processing and recycling of some preproduction plastic of the petrochemical industry such as pellets can lead to containment losses. On a global level, this type of litter is not subject to either routine or exceptional cleanups and is a proven risk of contamination to the marine food chain, particularly for birds. Improved storage conditions should be implemented during production processes, and multiple types of transportation.

Strengthen training carried out by professional and producer federations, processors and transporters, through, for example, the preparation of guidelines on the confinement in all circumstances of granules and pellets. Regulatory surveys in the concerned sectors are also advisable.



Plastic granules.

© Robin des Bois and International Pellet Watch



### 36 Water basin

Research conducted in Sweden under the framework of the OSPAR Convention revealed an important increase of the average amount of fragments of polystyrene in aquatic environments near production sites. Polystyrene waste is a significant contributor to debris.

Expand the above recommendations 31 and 35 to polystyrene.

## 2) Cigarette butts

### a- current knowledge

#### 37 Upstream

The smoking ban in public places leads smokers to the streets where cigarette butts accumulate. During rainy weather a large quantity ends up being washed away in waterways and on the coastline. The smoking ban was not tailored with practical measures to prevent cigarette butts spreading into the environment they are indicators of global pollution on the coast. Cigarettes filters made from cellulose acetate persist for several years in the environment, absorb hydrocarbons and could be eaten by fauna.

Study and widely diffuse information on the course and the breakdown of cigarette butts and related health and environmental impacts, including to sediments.

### b- regulations

#### 38 Upstream

Municipalities provide ashtrays in public places and restaurant owners on terraces, though this practice is not widespread.

Encourage or impose if necessary shop owners, managers of office buildings and municipalities to install ashtrays in the streets, carry out information campaigns targeting smokers and seek the help of tobacco manufacturers.

## B) Waste products aboard vessels

### 1) Regulations

#### 39 The sea

In 1988 Annex V of MARPOL the International Maritime Organization was a step forward. This annex concerns waste operation and maintenance of vessels. It does not deal with waste recovered in fishing gear. 20 years later it should progress especially in terms of definition. To allow the dumping of waste ground to a size smaller than 25mm and the dumping of other categories according to the distance from the coastline carry no sanitary or environmental logic

Capitalise on the revision of MARPOL Annex V to ensure that no discharge including ground matter is authorised at sea, except for a restrictive list. The presence of France in the working group of the International Maritime Organization on the evolution of Annex V would be constructive as well as existing and voluntary commitments by ship owners.

#### 40 The sea

It is specified in Annex V of the MARPOL Convention that the captain of a vessel 400 gross tonnage and above, ships certified to carry more than 15 persons must complete a "garbage record book" stating the quantities and qualities of waste generated onboard and disposed of on land. If the vessel is equipped with an incinerator it is mandatory to indicate what has been burnt, if equipped with a grinder or a crusher the weight of waste treated and discharged at sea should be indicated.

Remind port officers and ship safety inspectors of all rules relating to Annex V and during controls pay particular attention to garbage record books aboard all ships in particular cruise ships, and when present the state and operating performance of grinders and incinerators.

#### 41 The sea

Under application of EC Directive 2000/59/EC, vessel captains must notify, at least 24 hours before port of call, the port authorities with a description of waste onboard, whether the waste is to be disposed of on land or kept onboard. This requirement may be carried by freight forwarders or by the ship owners and does not apply to fishing vessels with a capacity of less than 12 passengers.

Remind shipping agents of their responsibility concerning the due and diligent provision of fixed or mobile waste reception facilities.

## 42 The sea

Under Directive 2000/59/EC, in a European Community port of call the captain of a vessel should dispose of all ship-generated waste in a port reception facility. There are exemptions, for example the captain may store waste onboard if the vessel has a suitable storage facility and if it is adequate for all produced and accumulated waste during the journey to the scheduled port of deposit.

Benefit from the review of EC Directive 2000/59/EC in order to clarify the types of exemptions and in particular to ensure that the port scheduled for the deposit of the waste includes port reception facilities conforming to European standards.

## 43 The sea

A waste management plan is also required by Annex V of MARPOL for vessels over 400 gross tonnage or carrying more than 15 persons. A number of motorised recreational boats therefore come under this category. The management plan must include written procedures of the collection, storage, treatment and disposal of waste and include the proper description of equipment onboard.

Require port officers and ship safety inspectors to carry out spot inspections in order to verify the presence and the implementation of waste management plans on recreational boats, which are subject to MARPOL.

## 44 The sea

Vessels which are not obliged to have garbage record book or a garbage management plan must, if they are more than 12m long, display a poster informing the crew and passengers of waste management requirements in accordance with Annex V of the MARPOL Convention.

Via the maritime affairs verify the presence of posters onboard vessels, for instance by means of spot inspections.

## 45 The sea

The Water Act requires that "recreational boats which are equipped with toilets and which have been constructed after January 1<sup>st</sup> 2008 and have access to sea, river ports, harbours and anchorage areas" should be equipped with minor facilities for either storage or wastewater treatment facilities of toilets. However nothing is imposed concerning the onboard storage of solid waste.

Capitalise on the current revision of the European Directive Recreational Boating to seek the inclusion of appropriate storage facility in the design of recreational boats.

## 2) Planning and information

### 46 Water basin

To date, means of waste reception along waterways, intended for barge operators and owners and recreational river boating are still insufficient, either along the waterways network or in inland ports.

On inland waterways, improve on a quantitative and qualitative scale the collection network of ship generated and household waste. Ensure that collection rates are adjusted to the amounts deposited.



Along the quay © SOS maldesaine

## 47 The sea

MARPOL regulations, European Parliament Directive 2000/59/EC, Directive Council of November 27<sup>th</sup> 2000 on port reception facilities for ship-generated waste and cargo residues require Member States to have fixed or mobile installations. The ECJ<sup>21</sup> condemned France for failing to conform to the regulation “Court order December 6<sup>th</sup> 2007.” The Minister of Transport sent several memos to all the prefects of coastal departments and this has enabled France to be in compliance. The litigation is currently on hold. A plan for waste reception and processing has been drafted for over 600 ports. The plans include an inventory of facilities available and contact details of service providers. The port authorities are required to be equipped or to use an external provider for waste treatment. However, the port collection equipment is sometimes poorly known or insufficiently accessible. In addition, equipment may not be watertight and/or clean and/or have the adequate sorting capabilities in spite of Clean Harbour operations. Finally, the discrepancy of instructions on sorting especially concerning plastic materials can hinder the overall effectiveness of port reception facilities. The example of facilities accepting plastic bottles but not the lids was mentioned during a meeting of the Working Group.

Improve signalisation, accessibility and availability of waste reception facilities at fishing, commercial and recreational ports. Harmonise tariff policies, sorting and adjust the collects to the frequency of deposits.

## 48 The sea

Frequently instructions and regulations addressing reception and management of ship generated waste are only displayed in certain locations such as the harbour master office.

Display educational information on marine debris and the related penalties in all ports on each pontoon in navigable inland waterways and along the coast, in a visible and repetitive way.



Warning sign on board a ferry ©LD Armateur

## C) Waste from fishing and shellfish farming

### 1) Current knowledge

## 49 The sea

The diversity of derelict fishing gear found at sea and on the coast reflects the difficulty of different parties to be the master of their tools. Due to lack of traceability of the origin and owners of derelict fishing gear it is important to identify what types of fishing are particularly concerned and in return inform the presumed users. Specialised kits exist and are used in Australia.

Develop an identification kit indicating the origin and type of fishing by examining the mesh, weave and other distinct characteristics of the recuperated derelict fishing gear.

<sup>21</sup> European Court of Justice of the European Communities.

## 50 The sea

Derelict fishing gear, lost during professional or recreational fishing, remain intact for several years and continue to catch shellfish and fish and entangle birds, sea turtles and marine mammals such as seal-monks, a threatened species. Losses of commercial species due to ghost fishing may be substantial if we are to believe the figures put forth by Japanese and American scientists.

Take action with new information targeting fishermen or their representatives on the damages caused to biodiversity in general and to commercial species by derelict fishing gear, remind the parties to report losses and when spotted, encourage the reporting of large derelict fishing gear.

## 2) Planning

### 51 The sea

Costs due to contamination of fishery products, damage caused to fishing gear and propellers getting caught in waste on the surface or bottom of the ocean amount to anything between 6,000 to 30,000 Euros per vessel each year according to a survey carried out in Scotland within the framework of the OSPAR Convention. Gear and fishing accessories total a large amount of waste found on the shoreline or collected by fishermen during fishing for litter operations. The derelict fishing gear could be originating from professional, recreational or illegal fishing. The modules for regrouping unwanted fishing gear at fishing ports and marinas as well as the technical means to collect them on the beaches are not sufficiently developed. Disposal, storage and management sectors are incomplete. Initiatives are local and do not benefit from a multi-year funding. It is noted that the nets used for protection in the construction trade, waste activities, farming and poultry farming face the same problems.

Consider as a priority, with support from governmental services and professionals dealing with waste, a feasibility study on the implementation of a national network concerning collection and disposal or recovery of used and derelict fishing gear used by professionals and recreational fishermen. The study will take into account the possibility of extended producer responsibility, or an equivalent system for the intervention of an eco-organism. The objective is to create, via a technical, industrial and financial partnership, a national network dedicated to all types of nets, ropes, rigging, accessories and other unwanted fishing gear deposited on the docks or recuperated on coasts and at sea.



© Robin des Bois



A whiting taken by a contraceptive and caught off the coast of Belgium © Omer Rappe

## 52 The sea

Another significant part of the waste found on coastlines or at sea originates from shellfish farming. The plastic wastes are usually regrouped at specific points, at either the top of the beach or on the upper shoreline, waiting to be evacuated by the waste drop off centres that are increasingly reluctant to accept them. The lack of an organized system induces a supplementary risk of dispersion into the environment and pushes some professionals to burn off wastes in the open air, causing air and sediment pollution which are harmful to good neighbourly relations and to the image of the profession.

Consider as a priority the carrying out with State support, of a feasibility study on waste generated by shellfish farming, including plastic and metal collection, management and transformation. A synergy with fishing gear issues is to be researched.

## 53 The sea

Shell deposits are subject to various unregulated practices and disputes between neighbours. Oyster shells have calcium based lime material properties similar to the maerl. Marketing activities are underway around the Thau lagoon and in the west of France, yet these isolated efforts must be unified and developed into a national network. Other shells such as crepidula shells could be included. Commitment 94 of the Grenelle de l'Environnement requires that maerl use should be reserved for prestigious purposes, which in turn would imply a reduction of extraction. Destruction of maerl banks hinders marine biodiversity.

Create a national network evaluating shellfish waste with support from the Ministry of Agriculture and Fisheries, which has the capacity to officially recognise agriculture amendments and the involvement of the fertilizer industry.

## 3) Collection

## 54 The sea

Despite efforts made by shellfish farming activities and associated collection operations, a large number of plastic materials such as protection nets, elastics and other accessories are scattered at sea and along the coastlines in the aftermath of storms. The industry notes that 50% of the waste collected on the intertidal zone after these events do not originate from the shellfish farming industry.

Encourage partnerships between shellfish farmers, local communities and professional reintegration associations or other specialised structures to collect accessories and lost objects on the intertidal zone after storms.



Shellfish farming accessory © Robin des Bois

# VI- Collection

## 55 Water basin, land-sea and sea interface

Discrepancies are noted in protocols, equipment and between professional reintegration associations dedicated to waste collection, and other professionals and communities.

In relation with the ADEME and other specialised structures, write a national guide on the prevention, sorting, recycling and disposal of marine litter in order to facilitate and secure the work of the involved teams and an adoption of the best practices.



Syringe in the foreshore/Syringe washed up on a beach shore © Robin des Bois

## A) Professional reintegration associations

### 1) Planning

## 56 Water basins and the sea

For over a decade, associations and work training organisations have been working on the definition of a position in relation to the maintenance and protection of beaches and coastlines. Coastal workers do not need the qualification of high school diploma. Their task and mission is to assess the state of the environment and to ensure the maintenance of the coastline (beaches and coastal paths), monitoring and carrying out inventories of any exceptional strandings (hydrocarbons, spills, animals and specific cargo...), identify green algae and toxic plankton, educate and inform the public. These workers are the only people who possess specific practical knowledge of each sector on the coastline; this knowledge should be assembled, interconnected and valued. Certain professional reintegration associations also intervene upstream on important riverbank flood plains. This position should be better defined, extended to continental aquatic environments and should also be held in higher esteem by the government and the population.

Define the status of a coastal worker by integrating their work into a network of observation and scientific monitoring. In order to add value to the position, it would be advisable that this job has a number of training modules in common with coast guards.



The ADELI and ESTRAN associations. © Robin des Bois

## 57 Water basins and the sea

Not all professional reintegration associations specialised in the maintenance of coastal and aquatic environment are properly identified, and due to lack of coordination they do not exchange information or feedback of their experience.

Organize the first days of exchange and information between all the associations taking part in regular collections of marine litter and gather a complete set of observations of aquatic environments. Some municipal services also participating in regular clean ups could also be involved.

→ See also proposition 3

## B) Direct collection by municipal services and private businesses

### 1) Planning

## 58 Water basin

Managers of storm water and dams such as VNF « Navigation and Navigable waterways », CNR « Waterways offices » and EDF « French electricity » (groups from hydrological services and from hydro-power producers) are crucial during floods and flooding periods concerning waste originating from upstream. To date, these wastes are directed downstream too often and are not the responsibility of any specific bodies. All involved parties; managers of waterworks or those benefiting from waterways must assume the management of jams.

Create a framework for dialogue between communities living upstream and managers of waterworks make use of any existing actors such as Water Agencies and State intervention and in particular legal means, which may be necessary to realise this pooling effort.



Wood and waste/litter on the impoundment of a dam on the Rhone ©Robin des Bois

## 59 Land-sea interface

Mechanical cleaning of beaches removes sand and organic matter from the foreshore. Certain coastal communities, such as the “Manche departmental authorities” supported by the “Seine Normandie Water Agency”, prioritize manual cleanups and limit to busy urban beaches mechanical cleaning. The principle of specific cleaning or otherwise called “rational”, or “selective”, makes it possible to preserve the ecological wealth, to reinforce the resistance of the coastline from erosion and decreases the burying of large quantities of sand and seaweed. Improper use of machinery (for example, excessive speed, and passing at the bottom “foot” of dunes or on wet sand) in the long term changes the structure, substrate and profile of the beach. The principle of selective cleaning supported by various structures such as the Conservatoire du Littoral, Rivages de France, “l’Association Nationale des Elus du Littoral, the National Association of Elected Representatives of the Shoreline” is accompanied by local decision making tools for coastal communities. In the communities applying this principle, no complaints were recorded concerning the presence of foreshore deposits.

Encourage selective cleaning of beaches by favouring manual cleaning; quote an example of communities and mayors applying this (technique) principle, and support the creation of a tools and guide to help with decision making and the training of staff carrying out the mechanical cleaning of beaches.

→ See also proposal 60

## 2) Information

### 60 Land-sea interface

To date the biological and geological importance of the foreshore is not fully understood by beach goers in spite of information efforts from the « Conservatoire du Littoral » and from other organisations. Organic materials of the foreshore are still too often considered as a waste and a visual pollution. Many beach goers consider that a clean beach is a beach without this foreshore material. However a beach without it is sterile and is subject to a higher risk of erosion. Local communities mechanically clean up beaches in order to please vacationers and to obtain tourism certification quality labels.

Launch local multi support/multi lingual information campaigns towards the public on the benefits of the foreshore and on the critical role of sea grasslands. Encourage tourism certification bodies such as Blue flag “Pavillon Bleu” to include protection of the foreshore as a criterion for obtaining the label “certification”.



Algae going to a dump. © Robin des Bois

## C) Collection by fishermen

### 1) Planning

#### 61 The sea

During fishing activities, collection of marine litter and bringing it to port may be carried out on a voluntary basis. This can for instance be organized with local fishing committees or under the framework of a “Blue Contract” or else in cooperation with Chambers of Commerce and Industry. Currently under development the « référentiel pêcheur responsable » (reference manual for sustainable fishing) will require all waste collected during fishing activities to be brought ashore. In Northern Europe community initiatives in this direction have had encouraging results. Bringing the waste back to land and marine litter treatment operations have been funded especially in the Netherlands by the State. The following proposition does not concern weapons and war relics or dangerous substances, which are subject to stringent reporting requirements and of specific recuperation and treatment procedures. Fishing for litter operations are applicable to the extent that on each vessel the waste can be stored away from catches in a rational and safe way.

Generalise voluntary collection of litter during fishing activities and the deposit on land, supervise the practical details of the collection and storage on board vessels and in consequently adapt transit and reception procedures of waste at port.

#### 62 The sea

Specific campaigns sometimes target certain zones of waste on the sea surface. IFREMER and regional fishing committees state that during certain seasons some areas accumulate marine litter on the seabed or in the water column.

In the case of marine litter accumulating on non-rocky seabeds, use commissioned vessels to carry out dedicated trawling campaigns. These specific campaigns should be subject to quantitative and qualitative follow-ups of the waste collected, as are coastal operations. [It is clear that these maritime

waste collection operations would not be carried out on fragile seabeds or fragile water columns depending on the position of the layers of waste].

## **D) Collection by the public**

### **1) Planning**

#### **63 Land-sea interface**

An important number of volunteers coming to the coast on one day could cause problems to the safety of the collectors and environmental damage if the volunteers have not been sufficiently trained and supervised concerning the benefits of foreshore natural organic matter, on richness of the fauna and flora in the local area and on the dangers of certain wastes. Professional beach waste collectors estimate that there should be 1 facilitator for 5 to 6 juvenile collectors.

Provide training to the volunteer's supervisors during cleanup days in collaboration with the Ministries of Environment, Youth and Sports, Education National and the Interior regarding first-aid certificates. The training of volunteers could be an aspect of coastal worker activities.

→ See proposition 56.

### **2) Information**

#### **64 Land-sea interface**

The question was also asked as to whether children should participate in cleanups even on an occasional basis and if picking up waste is the best teaching technique available. The work undertaken by school students could meet educational objectives such as mathematics, vocabulary, geography and learning about the environment. Children and their families could be observers and messengers and participate in programs of National Education in collaboration with associations.

Consider converting Cleanup Days to Awareness and Explanation Workshops and provide onsite information concerning the technical, oceanic and behavioural patterns which lead to the presence of wastes such as toothbrushes or candy bags on beaches and integrate quantitative and qualitative observations of the teams in databases on aquatic litter.

## **VII –Financing**

### **65**

The economic constraints imposed on managers of public waterways or the marine environment and the damage directly or indirectly caused by waste in the aquatic environments require the availability and pooling of financial resources for sustainable prevention, recuperation, sorting and management. Logically if this coordinated plan is applied, in the medium term the reduction of debris should be noted and the financing resources necessary for their management would also decrease.

Set up and quickly supply a fund complying with the principle of “the polluter pays” and establish upstream downstream solidarity through the financial sharing of eco-organisations, competent professionals, communities, private donors, the State, European Union taking into account the fact that much of the waste comes from an undetermined origin.

## Compilation of the working group

Agence de l'Eau Seine-Normandie
ANEL - Association Nationale des Elus du Littoral
Armateurs de France
Association Robin des Bois (président et rapporteur)
Association MerTerre
ASTEE - Association Scientifique et Technique pour l'Eau et l'Environnement.
CEDRE - Centre de Documentation, de Recherche et d'Expérimentations sur les Pollutions Accidentelles des Eaux.
Conseil Supérieur de la Navigation de Plaisance et des Sports Nautiques
CoLLecT-IF
Comité National des Pêches Maritimes et des Elevages Marins (CNPMEM)- Comité National de la Pêche Professionnelle en Eau Douce (CONAPPED)
Conservatoire du Littoral/Rivages de France
ESTRAN – Chantier d'Insertion ESTRAN Environnement Littoral (CIEEL) et Service Littoral
Fédération de la Plasturgie
FNADE - Fédération Nationale des Activités de la Dépollution et de l'Environnement
IFREMER
Kosta Garbia syndicat mixte
Ministère de l'Agriculture et de la Pêche/Direction des Pêches Maritimes et de l'Aquaculture (DPMA)
MEEDDAT – Direction Générale de la Prévention des Risques (DGPR)
MEEDDAT – Direction Générale de l'Aménagement, du Logement et de la Nature (DGALN) / Direction de l'Eau et de la biodiversité
MEEDDAT – Direction des Affaires Européenne et Internationale (DAEI)
MEEDDAT/ Direction Générale des Infrastructures, des Transports et de la Mer (DGITM)/ Direction des Affaires Maritimes (DAM)
MEEDDAT/ Direction Générale des Infrastructures, des Transports et de la Mer (DGITM)/ Direction des Services de Transports – sous-direction des ports et du transport fluvial
Nausicaä - Centre national de la mer
Surfrider Foundation Europe/ France Nature Environnement
Voies Navigables de France

## Institutions and organisations which have contributed to the recommendations

Association Rivages Propres
Association SOS maldeseine
Compagnie Nationale du Rhône
Comité National de la Conchyliculture
Conseil Général de la Manche
Fédération Nationale pour la Pêche en France

## Institutions and organisations which have provided useful information and to develop recommendations

Adopt a beach
Baltic Marine Environment Protection Commission
Black Sea commission
Centre de Recherches sur les Mammifères Marins de la Rochelle
KIMO Fishing for litter Scotland
Marine Conservation Society
NOAA American National Ocean and Atmospheric administration
Marine Debris Program
Programme des Nations-Unies pour l'Environnement- Programme Marine Litter
Project AWARE Foundation
OSPAR Convention
Environmental Protection Agency -USA

## The reports and draft recommendations were also addressed to

ADELI. Association effectuant des ramassages réguliers (Sud Gascogne)
ADEME
Agence de l'Eau Rhône-Méditerranée-Corse
Agence de l'Eau Loire-Bretagne
Aquacaux
Bloom
Conseil Général des Pyrénées Atlantiques
Conseil Général des Landes
CNIID
Fondation Nicolas Hulot
Greenpeace
Ligue de Protection des Oiseaux
Maire de Boulogne-sur-Mer
Parc Naturel Régional de Seine Normandie
ROC
Secrétariat Général à la Mer
Shark Alliance
UICN
Vigipol
WWF



Dredging at the port of Sète. © Robin des Bois

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