

OSPAR Convention for the Protection of the Marine Environment of the North-East Atlantic  
Meeting of the Biodiversity Committee (BDC)  
Stockholm: 23-27 February 2009

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## Fishing-for-Litter activities in the OSPAR Region

DRAFT Revised Background Report - 2009

Presented by KIMO International

**This document presents a draft background report on Fishing for Litter activities in the OSPAR region based on information, which has been available for KIMO International. It is for examination by BDC 2009 with a view to its finalisation and publication by OSPAR 2009 and invites Contracting Parties to provide information on Fishing for Litter (FFL) activities in their countries.**

### Background

1 At the OSPAR Commission meeting in 2002, Sweden and KIMO International presented a report announcing that the "Save the North Sea" (SNS) project would be co funded by the EU for three years. It was agreed that KIMO International would report progress to the BDC on an annual basis. KIMO informed BDC 2004 that an application to extend the project for another three years (2005–2007) had been submitted to the EU. However, as this application was unsuccessful, the project came to an end in December 2004.

2 Given that the SNS project would not continue, KIMO International presented a document<sup>1</sup> to OSPAR 2004, asking OSPAR to take a proactive approach to marine litter in terms of programmes and measures. Product 18 was added to the BDC Programme of Work<sup>2</sup> to produce a background report on Procedures to implement Fishing-for-litter activities in the OSPAR Region, to be presented to the BDC meeting in 2005. In Oostende 2007 OSPAR agreed Guidelines to implement Fishing-for-Litter activities in the OSPAR Region (*Agreement 2007-10*). ]

3. It is understood that formal Fishing-for-litter initiatives are now been operating in Scotland, Isle of Man and the Netherlands.

4. There is now evidence that several Contracting Parties are undertaking collection of marine litter as part of work programmes by their marine research vessels and that aerial surveys have also been done in some countries.

5. KIMO had been invited by OSPAR, where possible, to update this report on an annual basis. KIMO was unable to report to BDC 2008. The purpose of this report is to inform OSPAR of the current position as far as possible and to recommend further action. A Final Report for the Fishing for Litter Scotland 2005 – 2008 project is included as Annex 1 and will be available in hard copy at BDC 2009. Progress has been made on expanding FFL activities in several countries.

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<sup>1</sup> OSPAR 04/5/4

<sup>2</sup> OSPAR 2004 Summary Record 04/23/1 § 5.32 and ANNEX 17 (Ref. § 15.1)

## Action requested

6. BDC is invited:
  - a. to examine the updated 2009 Background Report prepared by KIMO International with a view to finalising the document for OSPAR 2009 and publishing it on the OSPAR website;
  - b. to ask Contracting Parties to provide information on FFL activities in their countries in order that regular updates can be presented to OSPAR.
  - c. To note the report on the successful outcome of the Fishing for Litter Scotland 2005 – 2008 project.

## **DRAFT Background Report on Fishing-for-litter Activities in the OSPAR Region**

### **1. Introduction**

1. Marine litter is causing widespread ecological effects, has a serious negative impact on the aesthetic qualities of many important coastal stretches, and has a significant detrimental economic effect on local coastal communities worldwide, including in the North-East Atlantic region. The assessment made within the framework of the OSPAR Commission, and reported in the OSPAR Quality Status Report (QSR) 2000, indicates that there had been no improvement in the situation with regard to marine litter since the previous quality status report for the region.

2. At the OSPAR Commission meeting in 2002, Sweden and KIMO International presented a report announcing that "Save the North Sea" (SNS), a major project aimed at tackling the problems of marine litter in the North Sea, had attracted € 5.8 million from the European Union under the Interreg IIIb Programme. The project was to encompass the environmental, financial and ecological aspects of the problems in activities undertaken by each of the project partners.

3. It was agreed that KIMO International would report progress to the BDC on an annual basis. In the second progress report, KIMO informed the BDC that an application to extend the project for another three years (2005–2007) had been submitted to the EU. However, as this application was unsuccessful, the project came to an end in December 2004.

4. Given that the SNS project would not continue, KIMO International presented a document<sup>3</sup> at the OSPAR Commission meeting in 2004, asking OSPAR to take a proactive approach to marine litter in terms of programmes and measures. KIMO International recommended the inclusion of the products identified in the document under the OSPAR BDC Work Programme. The Commission considered the document<sup>4</sup> and the proposals were supported by Sweden and other countries, which stated their intent to act as Lead Countries for the products suggested. The Commission agreed to include these products in the BDC Work Programme<sup>5</sup>. In this context, Sweden and KIMO International undertook to cooperate on Product 18, i.e., to produce a background report on Procedures to implement Fishing-for-litter activities in the OSPAR Region, to be presented to the BDC meeting in 2005. In Oostende 2007 OSPAR agreed Guidelines to implement Fishing-for-Litter activities in the OSPAR Region (*Agreement 2007-10*). ]

### **2. Decisions and initiatives to prevent and eliminate marine litter in the OSPAR region**

5. The problems caused by marine litter have been a longstanding issue within OSPAR and the North Sea Ministerial Conferences. Marine litter has been discussed at a high political level and included in declarations and statements from several ministerial meetings, most recently at the Bergen 5th North Sea Conference in 2002 and Bremen OSPAR Ministerial Meeting in 2003. Further Ministerial support was forthcoming at the 6<sup>th</sup> North Sea Conference in 2006 on recognising how fishing for litter initiatives could contribute to reducing the problem where it was agreed that *"Ministers request competent authorities to investigate methods through EU Directive 2000/59/ECTPF7FPT, or if this proves not to be possible, through fishing for litter initiatives, to enable the fishing industry to contribute more positively to reducing the amount of litter in the sea, especially litter which is hauled up with their nets. If this approach proves not to be feasible, Ministers request the competent authorities to develop financially supported fishing for litter initiatives for the landing of non-operational waste."*(para 22)<sup>6</sup>.

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<sup>3</sup> OSPAR 04/5/4

<sup>4</sup> OSPAR 2004 Summary Record (OSPAR 04/23/1), § 5.27

<sup>5</sup> OSPAR 2004 Summary Record (OSPAR 04/23/1), § 5.32 and ANNEX 17

<sup>6</sup> DECLARATION NORTH SEA MINISTERIAL MEETING ON THE ENVIRONMENTAL IMPACT OF SHIPPING AND FISHERIES Göteborg, SWEDEN 4 and 5 May 2006

A Ministerial commitment “to support the concept of FFL and agree to ask the appropriate departments in each Member Administration to look at the feasibility and potential cost to the fishing industry and departments of developing and implementing FFLs in their own jurisdiction.” was agreed by the British - Irish Council in February 2008.

6. The OSPAR Pilot Project on Monitoring Marine Beach Litter (2000–2006), and the designation of the North Sea as a Special Area for the purpose of Annex V to MARPOL 73/78, are two examples at the practical level of action taken to deal with marine litter in the OSPAR region. Apart from this, very little progress has been achieved to develop and implement programmes and measures to reduce the input of marine litter from its many sources, or to introduce mechanisms for the remediation of existing litter in the coastal and marine environments. Marine litter therefore remains one of the major unresolved outstanding pollution issues throughout the Northeast Atlantic region.

7. Annex V to the *MARPOL 73/78 Convention*, the main international convention aimed at controlling pollution from the shipping sector, deals with garbage (that may become marine litter). Annex V has been in force since 1988. The MARPOL Convention regulates types and quantities of waste that ships may discharge into the sea, taking into account the ecological sensitivity of different sea areas. The disposal of plastics is prohibited in all seas. All OSPAR Contracting Parties have ratified the Convention, including Annex V.

8. In Annex V, it is required that all ships of 400 gross tons and above, or ships certified to carry more than 15 persons, develop and follow a written garbage management plan. Such plans should have been developed by 1 July 1997 and include the following:

- Description of the collection, processing, storage and disposal of each type of waste generated by the ship, and waste that may be further categorised by local requirements, e.g., hazardous and medical waste;
- List of waste management techniques/equipment available and to be employed;
- Provisions for the discharge of garbage in compliance with Annex V; and
- Designation of a person to be responsible for carrying out the plan.

9. The North Sea and adjacent areas have been designated as Special Areas with regard to Annex V. In accordance with the regulations for Special Areas, discharges of garbage (except food waste) into the sea are prohibited. The Convention also comprises an obligation for countries surrounding Special Areas to provide appropriate reception facilities for ship-generated waste in their ports and harbours.

10. The *London Convention* (LC) was signed in 1972 and covers solely the control of dumping of wastes at sea. All OSPAR Contracting Parties have ratified the Convention. Annex I of the LC lists wastes and other matters which must not be dumped. It is recognised that plastic materials, and other materials that may cause problems of entanglement and ingestion by marine organisms, constitute an environmental hazard. As a consequence, dumping of such materials is prohibited.

11. *The EC Directive on Port Reception Facilities for Ship-generated Waste and Cargo Residues (2000/59/EC) was adopted in 2000. The objective is to “reduce the discharges of ship-generated waste and cargo residues into the sea, especially illegal discharges, from ships using ports in the Community, by improving the availability and use of port reception facilities for ship-generated waste and cargo residues, thereby enhancing the protection of the marine environment”. As a majority of Contracting Parties to OSPAR (with the exception of Iceland and Norway) are also members of the EU, they are required to implement the Directive and provide reception facilities for all types of ship-generated waste in their commercial ports, fishing harbours and marinas. Norway and Iceland are expected to implement the Directive as part of the EEA agreement.*

12. The Directive is aimed at ensuring a major reduction in marine pollution by the provision of adequate waste reception facilities in all EU ports, including fishing harbours and marinas. In addition, it requires all ships, fishing vessels and recreational crafts visiting these ports to make use of the facilities provided. More specifically, ports and marinas are to provide adequate reception facilities for ship-generated waste and cargo residues; a waste management plan is to be developed for each port which is monitored and approved by Member states; it is to be ensured that fee systems adopted by ports will encourage vessels to use the facilities rather than discharge their wastes at sea; ships should notify their intention to use facilities and quantities of waste on board before arriving in port; Members States should monitor compliance with the Directive and apply sanctions; and authorities should forward information on non-compliance to other EU ports which such ships may intend to visit.

13. An evaluation of the implementation of the Directive is being made. This will, hopefully, clarify the availability of reception facilities in various types of ports in the countries bordering North-East Atlantic. However, it is not clear whether waste caught in fishing gear and brought onboard fishing vessels is covered by the Directive. This waste is not generated by the individual fishing vessel, but accidentally brought on board the vessel. An informational EU expert group is presently considering this and other issues related to the implementation of the Directive.

14. The legal aspects of waste caught in fishing gear are one of the issues. According to one view put forward, such waste is to be considered as the fisherman's responsibility, since the fisherman has, in a legal sense, loaded the waste onboard his vessel when collecting his fishing gear. When doing so, the fisherman becomes the legal "owner" of the waste. Needless to say, if that will be the official standpoint, it will be detrimental to any attempts to encourage fishermen to assist in Fishing-for-litter schemes.

### **3. Socio - economic impacts of marine litter on the fishing sector**

15. The problem of marine litter is a common problem for coastal local communities and other organisations throughout the world. A wide range of studies and surveys employing many different methodologies have been undertaken over the years to assess the problem. These have attempted to address the problems of collecting data on the volumes, types, origin and other factors relating to marine litter and oil. There is much less research and data available about the economic and social impacts of these substances. In 2000, KIMO International presented to OSPAR the results of a two-year project to investigate the economic and social impacts of marine litter on coastal communities<sup>7</sup>. The report demonstrates the significant costs to coastal communities not previously acknowledged and demonstrates not only that polluters of the oceans are not being caught but that they are not being made to pay for their actions either. KIMO International undertook an exercise to collect further economic information on the impacts of marine litter on coastal communities in 2008 and is currently assessing how this information can be presented in a future report.

16. The fishing industry has long been associated with the contribution of marine pollution but little work has been done on the effects on the industry itself of marine debris and other pollution. When questioned about the effects of marine debris on their fishing activities, Shetland fishermen responded that 92% had recurring problems with accumulated debris in nets, 69% had had their catch contaminated by debris and 92% had snagged their nets on debris on the seabed. Many also experienced fouled propellers and blocked intake pipes. On average, 1-2 hours per week were spent clearing debris from nets. Debris could cause a restricted catch and many boats avoided particular fishing areas altogether due to the high concentrations of debris. The catch, net and other equipment could be contaminated by oil containers, paint tins, oil filters and other chemicals, resulting in a potential loss of revenue of up to £2,000 per incident. Large items such as wires and old nets may be collected off the seabed and may damage the nets. A fouled propeller could cost up to £300 for the hire of a diver to disentangle it and result in a substantial amount of lost fishing time. It is

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<sup>7</sup> Hall, Karen (2000): Impacts of Marine Debris and Oil. Economic and Social Costs to Coastal Communities. KIMO

estimated that each boat could lose between £6,000 and £30,000 per year due to the effects and presence of marine debris. If 50% of the Shetland fishing fleet was affected in the same way, the cost to the local industry could be £492,000–2,460,000 per year. Similarly, the cost of marine debris to the fishing community of the Swedish Bohus region was estimated to be over £620,000 each year.

17. According to reports from fishermen in both Shetland and Esbjerg (Denmark), small inshore boats appear to be more susceptible to marine debris than large pelagic boats. This may be because the larger offshore boats are fishing mid-water and are therefore less likely to collect debris on or near the seabed. Smaller boats may also notice the presence of marine debris more than larger boats as they have less crew and a lower profit margin, so any time or money lost will affect them more.

18. Fishing vessels, along with the fish farming industry, are perhaps the main sources of discarded fishing net, line, rope, crab pots, floats, fish feed bags, polystyrene blocks and fish boxes<sup>8</sup>. In turn, fishermen are finding an increasing amount of plastic debris amongst their catch, which not only takes time to remove, but plastic bottles and old net can themselves damage freshly caught fish. Moreover, there have been cases whereby plastic has blocked cooling systems causing engines to overheat. In some areas around the UK, such as the Bristol Channel, the problem has reached such a state whereby fishermen, when removing plastic items entangled in their nets, voluntarily place them in plastic bin liners for disposal by the local council at their base ports<sup>9</sup>. It has been noted<sup>10</sup> that much of what is known about the impact of litter on fishing activities is based on anecdotal evidence. Litter found in an offshore fishing bank caused a serious economic loss to fishermen in Swansea Bay<sup>11</sup>. The UK National Federation of Fishermen's Organization have confirmed that marine litter is a cause of concern around Britain's coasts, but no attempts have been made to quantify the extent of the problem.

19. Problems with propeller fouling, blocked intake pipes and damaged drive shafts have been reported in the North Sea, Alaska and the East Coast of North. According to two studies done in the Bering Sea and the Gulf of Alaska, 40–60% of bottom trawls collected plastic and metal debris. Inshore fishing is particularly important for Orkney, Shetland and the West Coast of Scotland, where the majority of small vessels are based. Scotland's fishing industry handled 71% of all UK fish landings into the UK in 1994, with a market value of some £279.3 million. Peterhead, Scotland's major fish market, is the largest in Western Europe. The fishing industry is also a vital source of employment in Scotland. It is estimated that there are over 8,500 people directly employed as fishermen, with a further 13,000 employed onshore in fishing related activity. Many of these people live around the coastline of Scotland.

20. Shetland fishermen have estimated the value of one hour of their time to £30–120 per hour (average £67). Using the average figure, the losses to an average Shetland fishing vessel would, annually, be as follows:

- £3,500–7,000 due to lost time clearing nets of debris
- £250–1,000 cleaning equipment and nets of contaminants
- £100–10,000+ due to time lost fixing nets
- £60–500 due to time lost with fouled propeller
- £2,000–10,000+ to repair nets
- £50–300 to un-foul propeller
- £100 for gear box inspection

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<sup>8</sup> Dixon and Dixon, 1983

<sup>9</sup> Earll and Gilbert, 1996

<sup>10</sup> Lart, 1995. According to this report, the two major types of litter interfering with fishing gear were plastics and sewage related debris.

<sup>11</sup> Williams *et al*, 1993) although no figures are quoted

- £6,000–30,000 per vessel assuming only one incident per year and working only 40 hours per week.

#### 4. Seabed surveys

21. There is limited knowledge about the qualitative and quantitative occurrence of various types of marine litter on seabeds as compared to the knowledge about marine litter on beaches and other land in the coastal zone. In the OSPAR region, data is available from surveys made in Norway and the Netherlands. In addition, results of surveys made in the Mediterranean and in Japanese waters have been published.

##### **Norway**

22. A major survey, mapping and cleaning up of Norwegian seabeds was made in the period 1982–1997<sup>12</sup>. In 1980, the Norwegian Oljedirektoratet (Norwegian Petroleum Directorate) and Fiskeridirektoratet (Fisheries Directorate) initiated a project leading to an area of 1,200–1,400 km<sup>2</sup> being surveyed annually for presence of waste and garbage. The objective was to survey and clean up waste that could originate from the extraction of oil and natural gas in Norwegian waters, particularly in the vicinity of important fishing areas, but also to get an idea of the waste situation on Norwegian Sea beds in general. Much of the garbage found on seabeds was collected and removed ("seabed cleaning") during those years, and the project was closed down when it was concluded that the remaining waste did not originate from activities by the oil industry. As a spin off effect of the project, several ship wrecks and other major obstacles that could cause damage to fishing gear were located and marked on the sea charts. Some seabed areas, with huge amounts of marine litter is still left, were described as "horror sights". For example, there is one area in the Skagerrak, where such a huge amount of marine litter has been trapped at a depth of 500–700 metres due to the specific currents prevailing in the area.

23. According to the Norwegian Fisheries Directorate, efforts to collect and take up lost fishing nets have been made regularly since 1983. On average, about 500 nets are found and removed every year (with a peak in 1992, when some 1,200 nets were taken care of). However, it is assumed that considerably larger amounts of fishing nets are lost and not reported. Since 1989, it is laid down in Norwegian legislation that when nets are lost during fishing for cod, haddock and saith, this should be reported to the Norwegian Coastguard.

##### **The Netherlands**

24. A systematic survey and investigation of marine litter accumulated on the seabed was carried out in the years 1987–1995 by the Netherlands in the Dutch sector of the North Sea. Results from the survey indicated an average of 116 pieces of marine litter per km<sup>2</sup> of seabed. Extrapolated to the entire Dutch sector of the North Sea at the time, these results would imply a total of 6.6 million pieces of marine litter, or approximately 8,600 tonnes of marine litter, on the seabed. Assuming that similar quantities of marine litter can be found all over the bottom of the North Sea, at least some 600,000 m<sup>3</sup> of marine litter could be resting on the seabed.

##### **Sweden**

24. In 2004, a small pilot survey was made of the seabed on the Swedish west coast, in the Kattegat, along transects 50–60 kilometres long, at water depths ranging from 6–30 metres. The seabeds in the area vary, from rocky hard bottoms to soft bottoms, including one area sloping from a depth of 12 to a depth of 30 metres. Marine litter, including lost/discarded fishing gear, was found on all bottom types. The items were scattered and no major accumulations of marine litter were found. The seabeds were video-filmed by means of special underwater video equipment as an alternative to side-scan sonar. At the speed of 3 knots (ordinary trawling speed) an area of around 40,000 m<sup>2</sup> can be filmed during one hour.

<sup>12</sup> Information provided by Norwegian consultants in a study commissioned by the Nordic Council of Ministers (2004) on the situation in the Nordic countries regarding management of waste from fishing vessels.

26. The objective of the pilot survey, funded by the Swedish EPA, was twofold, to be used in the OSPAR Pilot Project on Monitoring Marine Beach Litter, and in the Swedish component of the SNS Fishing-for-litter project.

### ***The Mediterranean and other European sea areas***

27. In the period 1992–1998, the distribution and abundance of large marine debris were investigated on continental shelves and slopes along European seas, including the Baltic Sea, the North Sea, the Celtic Sea, the Bay of Biscay and different areas in the north-western basin of the Mediterranean Sea and the Adriatic Sea. On the basis of 27 oceanographic cruises "different types of debris were enumerated, particularly pieces of plastic, plastic and glass bottles, metallic objects, glass, and diverse materials including fishing gear. The results showed considerable geographical variation in concentrations, which ranged from 0 to 101,000 pieces of debris per km<sup>2</sup>. In most stations sampled, plastic (mainly bags and bottles) accounted for a very high percentage (more than 70%) of total number of debris, and accumulation of specific debris, such as fishing gear, was also common. In some areas, only small amounts of debris were collected on the continental shelf, mostly in canyons descending from the continental slope and in the bathyal plain where high amounts were found down to more than 500 m. Dives using the manned submersibles at depth between 50 and 2700 m allowed accumulation areas to be detected on the sea floor. Analysis of these results revealed the influence of geomorphologic factors, local anthropic activities and river inputs. Temporal trends indicated a stable situation in the Gulf of Lion and seasonal variations in the northern part of the Bay of Biscay. Accumulation areas were detected 200 km west of Denmark, in the southern part of the Celtic Sea and along the south-east coast of France"<sup>13</sup>.

### ***Japan***

28. In Japan, researchers at the Tokyo University of Fisheries investigated marine litter on the seabed of Tokyo Bay during the period 1995–2000. Although it is prohibited in Japan to discard marine litter into the sea, large amounts of litter flow continually into Tokyo Bay. Some is washed ashore and then cleaned by local municipalities, supported by the local-government, but some of the litter sinks and accumulates on the seabed.

29. At Kanagawa Prefecture area in Tokyo Bay, small-trawl fishermen brought litter caught in their small trawls (6.5 metres-wide bottom-beam trawls, each towed at 3 knots for one hour) back to their port. The accumulation of marine litter on the seabed of Tokyo Bay was investigated by sampling of the marine litter items brought ashore by the fisherman. In addition, the survey was also made to examine the effectiveness of cleaning the seabeds with this method. Litter was sampled from the whole catch by the small trawl almost once a week. Samplings were made during a total of 330 days and in total 2,187 tows were made (an 86.9 km<sup>2</sup> large towing area). The sampled litter was classified into plastic, metal, glass, fishing gear, and others. Numbers and weights of the items in each category were measured. A total of 26,940 litter items (1,682 kg) were collected during the six years. Cans, plastic shopping bags, plastic food containers, beverage bottles and cans, and clothes constituted most of the litter collected. Plastics was the dominant item material and accounted for 51.2 per cent of the litter collected, with a total of 2,109 litter items. The proportion of fishing gear, e.g., fishing trap, nets and ropes, was 3.6 per cent. Litter was widely distributed over trawl-fishing grounds in the area, with an average of 310 litter items per km<sup>2</sup>, declining from 403 per km<sup>2</sup> in 1996 to 184 per km<sup>2</sup> in 2000.

### ***Germany***

30. Surveys of litter on the sea floor were carried out at 11 locations in the German Bight in the years 1983-88. The results of the seventy-nine surveys (mesh size 5cm) showed that the seabed in areas with the busiest shipping traffic were the most polluted with litter. In the main shipping lanes in the southern North

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<sup>13</sup> Litter on the Sea Floor Along European Coasts. Article by F. Galgani et al, published in 2000 in *Marine Pollution Bulletin*.

Sea on average 550-600 litter items weighing 350-400 kg were found per km<sup>2</sup>. Areas outside the shipping lanes were less polluted with 100-150 items weighing ca. 25 kg per km<sup>2</sup>. In areas with intensive fisheries activities, litter from fishing vessels was high. On average 43.7% (6-100%) of the litter found was plastic, 29.9% wood (0-59.8%), 17.9% (0-40%) glass, 7.1% (0-37.5%) fisheries items and 6.0% (0-19.6%) metal. Other items such as paper, cloth and food remains made up on average less than 5% of the litter found (Vauk et. al. 1989). Since 1990 the Alfred Wegener Institute in Bremerhaven has carried out annual surveys of litter on the seabed as part of their fish surveys. Data from a total of 1960 beam trawl catches (mesh size 1cm) and ca. 470 demersal trawl catches (mesh size 2cm) are available. Although the results have not yet been analysed due to lack of funding, it will be possible to calculate the amount of litter per km<sup>2</sup>.

### **SNS Fishing-for-litter project**

31. The "Save the North Sea" Fishing-for-litter initiative was implemented, co-ordinated and managed by KIMO International, one of the partners in the SNS project. The principle of the initiative was to mirror the operational methods of the Den Helder pilot scheme and to expand the initiative to other harbours in The Netherlands, Denmark, Sweden and the United Kingdom with a target of 60 vessels, five harbours and 1,000 tonnes over the period of three years (2002–2004). The final results of the project were published in 2005<sup>14</sup>.

32. *The Netherlands:* The participation of thirteen additional fishing vessels in Breskens, Stelladam and Vlissingen, as a continuation of the Dutch pilot project in Den Helder, was launched in December 2002, extending it to fishermen in Southern Netherlands in association with the relevant harbour authorities, fishermen's associations and KIMO Netherlands.

33. *Denmark:* A scheme was launched in Denmark in October 2003, involving 10 vessels in the harbour of Hvide Sande on the west coast, in partnership with the harbour authorities, Danish Fishermen's Association and KIMO Denmark.

34. *United Kingdom (Scotland):* The initiative was launched in the Shetland Islands in June 2003, involving 10 vessels and two harbours (Lerwick and Scalloway), in association with Shetland Fishermen's Association, Lerwick Port Authority, Shetland Islands Council and Shetland Amenity Trust. The harbour of Peterhead was added in April 2004, in association with Peterhead Port Authority and KIMO UK, involving nine white fish vessels

35. *Sweden:* Two vessels landing their catches in the Smögen fishing harbour on the Swedish west coast have been participating, in partnership with the municipality of Sotenäs.

36. In total, it is estimated that 54 vessels collected a total of over 400 tonnes of litter over the three-year period, which represents a phased implementation from 10 vessels in Den Helder (March 2002-December 2003) and a gradual role out across the nine harbours up to the end of 2004. The average per boat over the project duration was 4 tonnes per year, however this varies dramatically from harbour to harbour and country and country and the type of fishing activity utilised.

37. Based on the average amount of time spent cleaning nets per week (2 hours), the average hourly rate for a fisherman (£67), the average time spent at sea (3 weeks per month) and the average number of tonnes of litter collected by a boat in the scheme per year (4 tonnes). This is expected to cost fishermen £1,306.50 per tonne and only applies to fishermen's time, and does not include costs associated with lost catches, damage to gear or disposal costs.

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<sup>14</sup> <http://www.kimointernational.org/Save-the-North-Sea.aspx>

38. If this is applied to the estimated 400 tonnes that were collected by the end of 2004, the cost of marine litter to the vessels involved in the pilot project in lost time could have been £522,600 (€773,448).<sup>15</sup> If this figure were applied to all vessels in the OSPAR region, it would demonstrate the significant economic cost to the industry, not withstanding the environmental and ecologic burdens caused by marine litter.

39. It is even more significant that this waste is not usually generated by the individual vessels concerned, but from other sources. It could be argued that the industry is being penalised by the current charging regimes which apply in different countries, whether that is through harbours dues and/or disposal costs and landfill taxes, where these apply for waste that has no connection with the vessels concerned. This provides a disincentive to collect and return such waste to shore thus further contributing to the problem.

40. The SNS Fishing-for-litter initiative has been backed by significant cooperation from the fishing industry, harbour authorities and local authorities and, in some cases, national governments.

### **Current Fishing-for-litter Initiatives**

41. *The Netherlands:* The Den Helder project operated in 2005 as funding was identified from The Netherlands to continue up to and including the year 2008.

42. In March 2000, the Dutch North Sea Directorate in co-operation with the fisheries association started the Vuilvisproject Den Helder. The aim of the project was to clean up the North Sea from marine litter by bringing ashore the litter gathered in nets during fishing. The pilot project was initiated to investigate whether the amount of collected litter would be high enough in relation to the efforts needed to collect, process and destroy the litter. Since the beginning of the project in 2000 until December 2008, approx. 600 tonnes of litter were collected. Just over 2000 big-bags were collected, with an average weight of 350 kg. Note that a growing amount of fished up litter is collected separately since it's too big to effectively fit a big-bag. This is litter such as truck tires, fridges and large tree trunks. The <sup>16</sup>litter consisted mainly of parts of shiploads, wood, packing material, decaying fishing gear and rope. After being delivered ashore, the litter is properly destroyed. The fishermen receive no remuneration for taking part in the project. Ten ships that land their fishing products at the harbour of Den Helder have participated. The North Sea Directorate has contracted the local port reception facility to collect the fished litter from the fishing vessels, in addition to their operational waste. New big bags for the collection of the litter have been regularly supplied to the ships. The North Sea Directorate have paid the costs for the collection and processing of the litter.

43. A gradual extension of the project to all of the fishing harbours in the Netherlands with a port reception facility and a maximum number of fishing vessels has been considered. All participating vessels must be members of the Stichting Financiering Afvalstoffen Visserij (SFAV; Foundation for the Financing of Ship-generated Waste in the Fishery) to be allowed to participate. SFAV, founded in 1994, is an initiative by the fishing sector in cooperation with the Ministerie van Verkeer en Waterstaat. All Dutch fishing associations are SFAV members.

44. Currently the project undertaken by KIMO Netherlands and Belgium is operating in nine harbours in addition to Den Helder with a total of 58 vessels. More than 300.000 kg waste is collected from the North Sea every year. Monitoring of waste is conducted in two harbours using the OSPAR protocol. On 13 February 2009 a new FFL initiative in Den Haag with 6 vessels participating is expected to commence in early 2009.

45. *Denmark:* The scheme in Denmark, involving 10 vessels in the harbour of Hvide Sande, has been adopted by the harbour authority.

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<sup>15</sup> 2 hours per week x £67(€99.16) per hour = £134 (€198.32) per week. 3 weeks per month = 39 weeks a year. 39 weeks per year x £134 (€198.32) per week = £5,226 (€7,734.48) per year. This sum per year / 4 tonnes per year = £1,306.50 (€1,933.62) per tonne, and that sum per tonne x 400 tonnes = £522,600 (€773,448).

46. *United Kingdom (Scotland)*: Since the completion of the SNS the North Sea project in 2004 funding was obtained by KIMO UK for a three-year project commencing in April 2005 to expand the FFL scheme in Scotland to 10 harbours with participation from 100 fishing vessels to reach an objective to collect 500 tonnes. The project attracted the participation of 15 harbours including three harbours from the SNS project (Lerwick, Scalloway, and Peterhead) and Aberdeen City, Fraserburgh, Scrabster, Stornoway, Mallaig, Kinlochbervie, East and West Tarbert, Ullapool, Eyemouth, Kirkcudbright, Pittenweem and Cullivoe (Shetland). A final report for this phase of the project is available at <http://www.kimointernational.org/Portals/0/FFLSFR20052008%20-%20lo.pdf>. The project has now been funded for another three years (2008 – 2011) with targets of 200 vessels, 200 tonnes, 10 pelagic vessels, work towards a reuse, recovery, and recycling target of 10% and developing a UK wide strategy for FFL.

47. *United Kingdom (England)*: Funding has been received by KIMO UK to develop a three year project involving four harbours and 60 vessels in the South West of England. The project is expected to operate until 2011.

48. *Isle of Man*: The FFL initiative has been running for nearly two years and is fully supported by the Isle of Fisherman's Association with its members unanimously agreeing to participate. There are FFL waste reception facilities in our major Ports/Harbour of Douglas, Ramsey, Peel and Port St Mary.

49. *Sweden*: The scheme in Smögen ceased with the end of the SNS project. Possibilities to expand the activities to other fishing harbours are presently being looked into by KIMO Sweden.

50. *Norway*: In Norway an ad hoc committee was examining at cleaning up waste in the marine environment.

51. *France*: Information was received through the Steering Group of the OSPAR Pilot Project on Monitoring Marine Beach Litter at the 9th meeting in Dieppe, France, 1–2 October, 2005 regarding activities by local communities in the Pyrénées-Atlantiques region. The communes group Kosta Garbia collects waste at sea during the summer, at distances between 300 metres and 3 nautical miles from the coast. From the coast out to 300 metres, five communes collect floating waste. The amount of marine litter collected at sea (0–300 metres from the coast) was 50.1 m<sup>3</sup>. Such litter is collected by means of small boats or jet skis. A fisherman has been engaged by the communes group Kosta Garbia to collect floating marine litter by surface trawling the sea between 300 m and 3 nautical miles from the coast. After aerial surveillance over the area, in cooperation with the fisherman, one can detect presence of marine litter, particularly as strings between two waterfronts. However, sometimes this litter sinks below the surface before the fisherman gets there. The amount of litter thus trawled and collected during 90 days in 2004 was 8 tonnes of plastic and 6 tonnes of wood. Further activities occur involving fishermen in the Aquitaine region: The objective of the programme is to engage fishermen to bring back waste ashore, i.e., is to collect waste at sea (remedial measures) and to make sure that waste is not thrown overboard (preventive measures). The programme started in 2002 with the company Bertin Technologies, and has been implemented since 2004 by Institut des Milieux Aquatiques. About 200 vessels in four fishing harbours – Arcachon, Capbreton, Saint-Jean-de-Luz, and Hendaye – participate, which means that some 1,800 fishermen are engaged. Receiving skips or containers are available in the ports for the waste collected by fishermen. For this programme, a Special Programme Officer has to be in the ports every day to give plastic bags to crew members, to raise awareness among professional fishermen, to set up contacts with contractors who pick up the skips, and for ongoing contacts with professional organizations and port authorities. In 2004, 89 tonnes (1007 m<sup>3</sup>) of waste were collected, in 2005 (January–August), the amount was 75 tonnes (854 m<sup>3</sup>)

## Discussion

52. Experiences from the activities implemented so far point at a number of issues that need to be considered when discussing an expansion or initiation of Fishing-for-litter initiatives in additional countries or

harbours in the OSPAR region. Formal/legal/administrative issues, as well as practical questions, need to be investigated and discussed. Such issues include, e.g., what is required from the participating countries and local communities, relevance in relation to existing legislation on reception facilities, time aspects (the need for a long-term commitment), coordination responsibilities (central/local), equipment on board vessels, options for delivery and reception ashore, and capacity and schemes for waste handling/management/disposal in local communities. Of course, economic issues – fee systems, economic compensation for additional costs incurred – also have to be investigated and discussed.

53. Furthermore, the implementation of legislation on mandatory reporting to the authorities of loss of nets at sea (preferably with as exact notes on positioning as possible) not only in Norway but throughout the OSPAR area has been suggested. ]

54. The Fishing-for-litter initiatives clearly highlight a number of important aspects:

- Motivated fishermen, and fishermen's organisations;
- No extra cost to the fishermen, i.e., no fee for delivery of the waste collected at sea;
- Interested local communities/harbour operators;
- The existence of an already effectively functioning system for reception and management of waste that could handle the extra quantities of waste delivered;
- A system set up to keep track of the extra waste delivered – e.g., through separate big bags;
- A central authority to coordinate the project;
- Funding secured over a longer period of time to pay for the extra equipment needed onboard the vessels, as well for additional costs associated with the delivery and treatment of the waste

55. The following principles are applicable:

- There should be no extra cost to the fishing boats/fishermen, no extra charges for delivering the waste ashore. The fishermen's contribution is the time spent, on a voluntary basis, to clear the fishing gear and collect the litter in big bags to be brought ashore.
- There should be no extra cost to the local communities or the harbour operators receiving the waste collected in the fishing gear for handling and final disposal of the waste.
- The extra costs must be covered from external funding sources.

56. The Fishing-for-litter initiative has demonstrated on a limited scale that the objectives and aims of the scheme can gain the support of the fishing industry, port authorities and local authorities. Furthermore, it can contribute to changing practices and culture within the fishing sector, provide a mechanism to remove marine litter from the sea and seabed, and raise awareness among the fishing industry, other sectors and the general public.

57. It could be argued that if similar schemes were to be implemented throughout the OSPAR region, significant amounts of marine litter could be removed from the sea thus reducing both environmental impacts and economic costs to the fishing industry and other sectors. If the participation of more than 50 vessels could be encouraged, and a target of 500 vessels could be achieved, a total annual collection rate of 2,000 tonnes could be expected. This would represent 10 per cent of the estimated 20,000 tonnes annually dumped in the North Sea. It could, therefore, be argued that if similar schemes were to be implemented across the OSPAR region, the Fishing-for-litter initiative could act as a significant OSPAR programme and measure to reduce marine litter. However, in order to keep up with the present likely rate of accumulation of litter on the seabeds in the region, Fishing-for-litter activities would probably have to be complemented with large-scale, regular and targeted clean-up operations operated and funded by, e.g., governments and government agencies.

# *Fishing for Litter Scotland Final Report 2005 - 2008*



## Foreword

Clean seas are fundamental to the fishing industry and we must play our part in stewardship of the oceans. But the problem of marine litter is not just an environmental issue for our members. As illustrated by the KIMO report in 2000, marine litter has a significant economic impact on the industry.

On average 1-2 hours per week is spent clearing debris from nets. The debris can cause a restricted catch and many boats avoid particular fishing areas altogether due to the high concentrations of debris. Oil containers, paint tins, oil filters and other chemicals can contaminate the catch, net and other equipment. This may cost up to £2,000 in lost fish each time. Large items such as wires and old nets may be collected off the seabed and may damage the nets. Fouled propellers can cost up to £300 for the hire of a diver to untangle it. A substantial amount of fishing time can also be lost a matter of considerable consequence with regard to current days at sea regulations.



That is why our Federation was so pleased to endorse the Fishing for Litter initiative when first approached. Fishing for Litter is one of the most innovative and successful projects to tackle marine litter at sea. This imaginative yet simple initiative aims to reduce marine litter by involving one of the key stakeholders, the fishing industry. The initiative not only involves the direct removal of litter from the sea, but also raises awareness of the problem inside the industry as a whole. The project highlights how various stakeholders, non-governmental organisations, local government, harbour authorities, and the fishing industry can unite to participate to be part of the solution not the problem.

Scotland has been able to be a trendsetter in this initiative and I am pleased to note that the initiative is being copied in other parts of the UK and in other countries.

A handwritten signature in black ink, appearing to read 'Bertie Armstrong'.

Bertie Armstrong  
Chief Executive  
Scottish Fishermen's Federation

### Background

Fishing for Litter is one of the most innovative and successful projects to tackle marine litter at sea. This imaginative yet simple initiative aims to reduce marine litter by involving one of the key stakeholders, the fishing industry. The initiative not only involves the direct removal of litter from the sea, but also raises awareness of the problem inside the industry as a whole.

Despite many programmes and initiatives and legislation to reduce marine litter it remains one of the most significant environmental problems yet to be addressed and affects the marine environment on a worldwide scale. Around 20,000 tonnes<sup>1</sup> is dumped into the North Sea alone every year. Of that, 70% sinks to the sea bottom, 15% floats on the surface and 15% washes up on beaches. Currently only the proportion that washes ashore is targeted by cleanup and awareness campaigns.

Plastic, the predominate type of marine litter, can cause entanglement or be ingested by marine mammals and birds killing 100,000 and 1,000,000 respectively world wide each year<sup>2</sup>

Studies as part of the Save the North Sea<sup>3</sup> project showed that 96% of Fulmars in the North Sea had plastics in their stomachs and a recent study by Plymouth University<sup>4</sup> has highlighted the abundance of microscopic plastic fragments in the marine environment. KIMO<sup>5</sup> has also shown the cost to the fishing industry of marine litter, which can be up to £30,000 per boat each year through contamination of catches, broken gear and fouled propellers. It is therefore essential that urgent action be taken to reduce what is currently a significant marine pollution problem.



*A young seal caught in a plastic strapping band*



*Marine litter on seashore © KIMO*



*Marine Litter © J.A van Franeker*

<sup>1</sup> Convention for the Protection of the Marine Environment of the North East Atlantic, Summary Record, IMPACT 95/14/1-E Page 4

<sup>2</sup> UNEP GPA, Marine Litter Trash that Kills leaflet

<sup>3</sup> Alterra J van Franeker, [www.savethenorthsea.com/fulmars](http://www.savethenorthsea.com/fulmars)

<sup>4</sup> Lost at sea: Where is all the plastic? Richard C. Thompson, Ylva Olsen, Richard P. Mitchell, Anthony Davis, Steven J. Rowland, Anthony W.G. John, Daniel McGonigle, Andrea E. Russell, 7 May 2004 VOL 304 Science

<sup>5</sup> Impacts of Marine Debris and Oil. Karen Hall - KIMO, 2000

## Fishing for Litter

The Fishing for Litter initiative was originally started by the North Sea Directorate of the Dutch Government in co-operation with the Dutch Fisheries Association in March 2000. The aim of the initiative was to clear the North Sea from litter, by providing bags to bring ashore the litter that is gathered in the nets as part of fishing activities and disposing of it on land. During the first year of the project (up to March 2001) over 120 tons of litter was collected. The co-operation of the vessels and their crew was on a voluntary basis. Pilot schemes operated by KIMO International in harbours in Shetland, Scotland, Sweden, Netherlands and Denmark were initiated as part of the EU Interreg funded Save the North Sea<sup>6</sup> project between 2005 and 2007.

### KIMO UK

KIMO (Local Authorities International Environmental Organisation) is an association of coastal local authorities whose goal is to eliminate pollution from Northern Seas. The organisation's members include 120 local authorities representing over 6 million inhabitants in Norway, Denmark, Sweden, the Faeroe Islands, the Netherlands, Belgium, United Kingdom, Republic of Ireland, the Isle of Man and it has recently established a KIMO Baltic Forum involving 5 countries. KIMO UK is the United Kingdom network of the organisation and has a Secretariat based in the Shetland Isles. For more information see [www.kimointernational.org](http://www.kimointernational.org).



Amity II PD 177 © David Linkie

## Project Sponsors

The project was jointly funded by the Scottish Executive, Scottish Natural Heritage, the Crown Estate, Shetland Enterprise and Western Islands and Aberdeenshire Councils to the value of £199,218.75.



Marine Litter Bags © KIMO

## Project Summary

Fishing for litter is a simple idea. The participating vessels are given large (1m<sup>3</sup>) hardwearing bags to collect marine litter that collects in their nets as part of their normal fishing activity. Operational or galley waste generated on board, and hence the responsibility of the vessel, continues to go through the established harbour waste management system. Full bags are deposited on the quayside where the participating harbours monitor the waste before moving the bag to a dedicated skip for disposal. The project provided the bags and covered the waste costs and the fishermen and harbours volunteered their time. The project was co-ordinated by a part time post holder who managed all aspects of the project.



Marine Litter © J.A van Franeker

<sup>6</sup> [http://www.kimointernational.org/Portals/0/save\\_the\\_north\\_sea\\_low.pdf](http://www.kimointernational.org/Portals/0/save_the_north_sea_low.pdf)

## Project Aims

There were two main aims to the project. Firstly the physical removal of marine litter which sinks to the seabed and secondly to raise awareness amongst the fishing industry that it is no longer acceptable to dump marine litter over the side. One effective way to do this was to show fishermen the cost of removing marine litter from their nets. KIMO has calculated this to be approximately £1,300<sup>7</sup> per tonne in lost time with out considering damage to gear or lost catches. A secondary aim of the project was to monitor the marine litter coming ashore to establish its origin, age and to establish any regional variation or trends. This information has been forwarded to the OSPAR Marine Litter Monitoring Program, as there is currently only limited data on seabed litter.

## Project Objectives

The objective of the project was to establish a network of ten participating harbours around Scotland and to engage as many fishermen as possible in the scheme. This would give fishermen the flexibility to participate in the scheme irrespective of where they land their catch.

## Project Timing

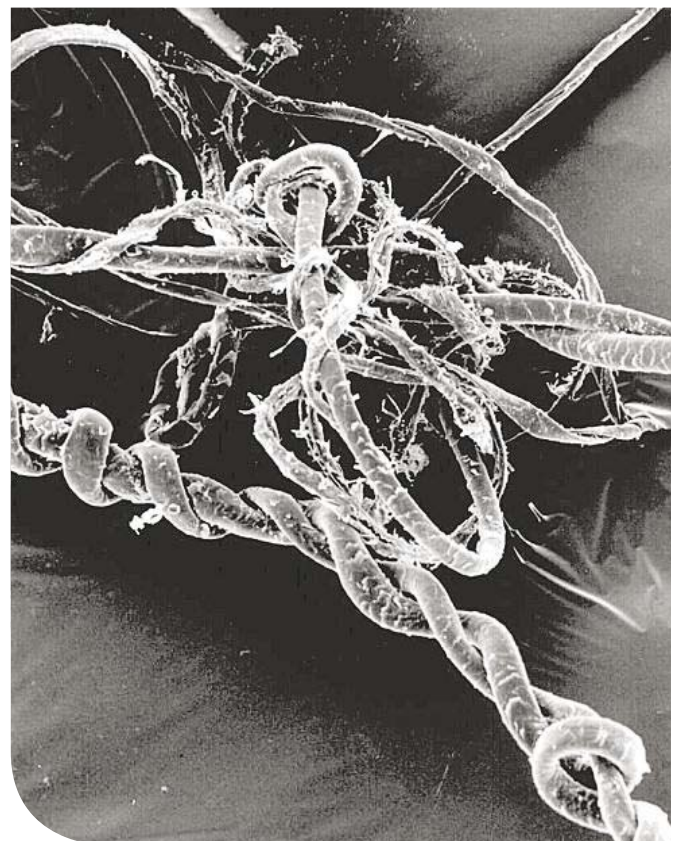
The project was initiated on the 1st of April 2005 and operated until end of June 2008.

## Project Location

The project location was all waters around Scotland where the commercial fishing fleets operate. Originally ten Scottish harbours were targeted: Shetland (Lerwick, Scalloway), Peterhead, Fraserburgh, Scrabster, Aberdeen, Arbroath, Kinlochbervie, Stornoway, Ullapool and Troon. An additional seven harbours were added later, Eyemouth, East and West Tarbert, Mallaig, Kirkcudbright, Cullivoe and Pittenweem. Aberdeen withdrew from the project, due to lack of participation, and Arbroath and Troon did not sign up to the project.

## Beneficiaries

The removal of marine litter from the seabed will have a large benefit to wildlife. Plastic, the predominate type of marine litter, can cause entanglement or be ingested by marine mammals and birds. A recent study by Plymouth University<sup>8</sup> has also shown the alarming prevalence of microscopic plastic particles in northern seas, which can be taken up by filter feeders. All of these groups would benefit from a reduction in marine litter.



*Fragment of microplastic from shoreline. Similar fragments, some less than 20 µm in size (less than the diameter of a human hair) are now present on shores and in the water column throughout the NE Atlantic  
© Dr Richard Thompson, Plymouth University*

As levels of marine litter reduces, fishermen themselves will achieve a long term benefit as currently marine litter damages their catches and costs them loss of valuable time at sea. Due to the estimated reduction in litter arriving ashore there will also be a benefit to local authorities that are required to clean amenity beaches in their area and for the public who use them. Other positive impacts will be experienced by various other industries in coastal areas for example, in the aquaculture industry as marine litter can clog and damage cages and nets.

<sup>7</sup> Impacts of Marine Debris and Oil. Karen Hall - KIMO, 2000

<sup>8</sup> Lost at Sea: Where is all the plastic? Science 7 May: 838 R. C. Thompson

## Project Targets

To ensure the objectives of the project were met several project targets have been set:

- The involvement of ten harbours in the initiative.
- The involvement of 100 boats in the initiative.
- The collection of 500 Tonnes of marine litter
- The production of a yearly report
- The production of a report on the analysis of the monitoring
- The production of a A4 leaflet
- The production of display material

## Project Objectives

### *Scottish Network of Harbours*

The overall objective of the project was to involve as many fishing vessels as possible in the scheme and in order to achieve this a network of landing sites needed to be developed. To ensure geographic coverage and in an effort to involve the busiest ports it was decided to initially target Designated Landing Ports (DLPs). In most cases there was a spirit of cooperation from port authorities who understood the value of the project and ports personnel were involved in the scheme to move landed full bags to secure locked ships and liaison was maintained to ensure full skips were replaced by local registered waste contractors. Additional infrastructure needed to be designed and was supplied in the form of special metal boxes to hold the bags ensuring that hygiene standards in fish markets were not compromised.

The installation of infrastructure progressed on a planned programme over the three years. The first year target was the addition of three new harbours to the existing two in Shetland and Peterhead, which had participated in the successful Save the North Sea project. This was achieved with the addition of Fraserburgh, Aberdeen and Stornoway. The network continued to expand during the second year of the project with the addition of the six harbours. These harbours were East and West Tarbert, Eyemouth, Mallaig, Scrabster, and Kinlochbervie.

The final year saw the addition of Stornoway, Ullapool, Pittenweem, Kirkcudbright (with the assistance of the Solway Firth Partnership) and Cullivoe harbours.

Some interesting aspects of the project included; that foreign boats landing in Ullapool on a regular basis were approached for the first time to join the scheme, the benefit of having a network of harbours started to illustrate the benefits of the scheme, many of the participating boats were beginning to land full bags of waste in several different harbours depending upon where they were fishing at any one time, discussions with KIMO Faeroes to enlist Faeroese vessels, which were landing in Scrabster were initiated, the Port of Aberdeen withdrew from the project due to lack of participation from vessels operating out of that harbour.

There was a reduction in the participation of vessels in Stornoway. Meetings were held with both Stornoway Harbour and the Stornoway Fishermen's Co-op to ascertain the reasons behind this and reinvigorate participation. Two main problems had arisen, firstly the bags were too large for some of the vessels and secondly there was operational difficulties regarding waste disposal between the harbour and the fishermen. As a result the Project Officer investigated the possibility of sourcing smaller bags and the Fishermen's Co-op agreed to promote the scheme to its members. After meeting with Stornoway Fishermen's Co-op and consulting with a number of the harbours that have a smaller day fleet it was decided to order a test batch of 600 smaller bags. These bags were roughly one-third the volume of the original bags with a base of 65x65 cm and a height of 80cm.



Vision BF 36 © David Linkie

These bags were a more manageable size for the smaller boats and prevented material starting to decompose in the bags, as they filled up more quickly.

By the end of the first three years vessels operating in different parts of Scotland had the opportunity to land full bags and collect new bags in 15 harbours.

### Vessels Participation

A significant amount of time in the project was undertaken engaging with the fishing industry, not only at a national and regional level, but also especially at a local and individual level. Experience had illustrated that personal contact with boat skippers and crews was essential to firstly promote the benefits of the scheme to individuals in the industry and secondly to get their commitment to participate. A considerable amount of time was employed contacting skippers to enlist their participation and registration in the scheme.

To facilitate this, approaches were made to all local fishermen's associations to ensure support for the scheme and also to enlist their assistance in promoting the scheme through their membership. In addition contact lists were obtained to enable approaches to be made to as many vessels as possible. One of the main obstacles to enlist vessels to register was the difficulty in contacting skippers when at home or at sea. This was quite time consuming. A total of 41 vessels were registered achieving the first year target for the number of boats involved 3 months ahead of schedule. Subsequent campaigns to register vessels were targeted around port launches ultimately reaching a total of 110 vessels.

Other constraints which restricted vessels participation rates was the amount of time vessels spent undertaking other activities such as oil contracts, dry docking and the impact of the introduction of "days at sea" restrictions.

An information pack was developed for each harbour outlining the procedures and infrastructure in each homeport for vessels.

In addition to that approach, in order to present the scheme to as wide a range of stakeholders as possible, a programme of other initiatives were undertaken. Where possible, in co-operation with local stakeholders, local media events were held to promote launches in the majority of ports participating in the project.

Meetings were held with the Scottish White Fish Producers Organisation, Shetland Fishermen's Association, Stornoway Fishermen's Co-op, Pittenweem Fishermen's Mutual Association, The Grab Trust in Oban and Scottish Fishermen's Federation. In addition a series of visits to operating ports was initiated over the three-year period.



*Representatives of Dumfries and Galloway Council, Solway Firth Partnership, SNH, The Crown Estate, KIMO UK and local skipper and harbour master at launch in Kirkcudbright © KIMO*

Introduction of the SEAFISH Responsible Fishing Scheme (RFS) assisted the project by offering the opportunity for actively targeting vessels that were planning to register in the RFS Scheme. Clause 5.2 of the scheme places an obligation on vessels to adopt measures to deal with marine litter. Although it doesn't mention Fishing for Litter the requirements in Clause 5.2 clearly adhere to the FFL objectives of removing marine litter from the sea.

- *Fishermen shall make every effort to avoid creating marine litter as a result of their activities at sea.*
- *Any marine litter produced or collected as a result of fishing operations shall be returned to port for safe disposal where it is physically safe and possible to do so.*

- *Fishermen shall recover other persistent garbage from the sea as opportunities arise and prudent practice permits.*
- *Fishermen are encouraged to participate in litter surveys and wider marine surveys where available.*
- *The vessel shall ensure that it prevents the discharge of all plastic garbage material to the seas and wherever possible prevents disposal of other marine litter whilst at sea. Wherever it is possible to collect litter caught through fishing activity, the vessel shall set up procedures with the crew to hold that litter aboard until it can be safely disposed of ashore.*

### Project Promotion

In addition to ensuring active participation in the scheme by fishing vessels and port authorities, an objective of the project was to promote the scheme to as wide an audience as possible. This would assist in raising the profile of the marine litter issue and highlight that one of the contributors to the problem was meeting its responsibilities to reduce the problem through the scheme. It was also an opportunity to acknowledge the sponsor's contribution and KIMO's involvement.

A public relations strategy was developed which included, in addition to the local harbour launches, attending major industry events such as the annual Fishing Exhibition at the SECC in Glasgow.



**"There's that boots you lost over the side last month" © KIMO**

Promotional and exhibition material was commissioned which included an A4 coloured flyer, exhibition display material, and an advertising campaign in the industry trade press was conducted.

Mr Ross Finnie, the Scottish Environment and Fisheries Minister launched the project at Fishing 2005 Exhibition in Glasgow. To achieve the best possible press coverage the services of Weber Shandwick, a public relations company were engaged to handle the PR for the launch. They were chosen due to the high standard of their previous work on the Save the North Project (SNS).



*Skipper Ian Gatt, Minister Ross Finnie, FFL Project Team and Sponsors at Fishing 2005 Launch*

The event itself was a success and received considerable press coverage, especially in the trade press.

One of the main objectives of the project was to have the project featured on a major Scottish Television programme. Fishing for Litter was featured by the popular BBC programme Landward in October 2006. Several boats, including the Amity II, which featured on the BBC Trawler Men series, and the project officer, were filmed during September highlighting the benefits of the project.

Through its involvement as a Non Governmental Organisation (NGO) KIMO was able to promote the FFL initiative at the OSPAR Commission<sup>9</sup> who approved a Background Report and Guidelines on How to Develop a Fishing for Litter Project for publication.

<sup>9</sup> <http://www.ospar.org/documents/dbase/publications/p00325%20Fishing%20for%20Litter%20activities%202007.doc>

A presentation on Fishing for Litter was given to Seafood Cornwall as they were considering establishing a similar scheme. As a result of this seminar a small steering group was established to investigate developing Fishing for Litter project in the South West of England. Keep Wales Tidy approached the project with a view to applying for funding for a scheme in Wales. The project was promoted internationally at KIMO International Conferences and AGMs.

As the project expanded and received more publicity there was still strong interest in the project and articles were written for The Grab Trust in Argyll, Coastnet's Strandline magazine and the BBC online pages for the popular programme Coast. The project co-ordinator also took the opportunity whilst at the Fishing 2007 Exhibition to give an update on the project to the Clean Coast Scotland Network. Invitations to write articles on the project were received from Firth of Forth Estuary Forum Newsletter and information was forwarded to be included in a new Sea Food Scotland website. Articles on the project were written for the Firth of Forth Estuary Forum Newsletter and the Peterhead Harbour Authority.

The project responded to an invitation by KIMO International to present the project at the 17th KIMO International Annual General Meeting attended by 70 delegates in Wexford, Republic of Ireland. At that event an opportunity was presented to highlight the project to Irish Minister of State at the Department of Agriculture, Fisheries and Food, Mr John Browne TD who offered to consider a similar scheme in Ireland. A conference of an Interreg IIIa Clean Coast Project for the Irish Sea in Wales was given a presentation on the FFL Scotland project. Subsequently a preliminary meeting was held with An Taisce (an organisation similar to Keep Britain Tidy) to explore avenues for Ireland.

As part of promoting the project and disseminating the monitoring results the Co ordinator attended two OSPAR Marine Litter Working Group meetings. Discussions were held on how to incorporate the project monitoring results into the OSPAR marine litter beach monitoring protocol.

At the invitation of Aberdeen City Council, the project was featured at the launch of the Bag for Life Campaign in the Council's offices, an update on the project was given to the KIMO International Board and KIMO International Baltic Forum in June 2008. As a result the KIMO International Baltic Forum is investigating taking forward the initiative in several harbours in the Baltic subject to funding.

Advice and support was given to the Isle of Man Government to present a FFL report to the Irish/British Council that was successful in gaining political support for the initiative.

An invitation was received from the Netherlands Government to supply information about FFL Scotland for a United Nations Environment Programme (UNEP) Working Group on Marine Litter, which was submitted. Feedback on the project was very positive.



*Bag for Life Campaign launch in Aberdeen 2008 © KIMO*

## Monitoring

Monitoring was done on two different aspects. A total for tonnages was kept as all bags/skips were weighed as they were delivered to licensed waste disposal sites and this data was collected through waste invoices. A total of 117 tonnes was collected over the period of the project. A detailed breakdown by harbour is included as Appendix 2.

One of the most challenging aspects of the project was to design and develop methods to gain information about the volumes, types and possible sources of waste collected in nets at sea. Monitoring of waste had started in Shetland where the Shetland Amenity Trust were undertaking the monitoring of all bags coming ashore during the Save the North Project (2004 – 2006). An adapted monitoring sheet was developed based on the OSPAR Beach Monitoring Protocol Appendix 3. After discussions with port authorities six harbours were selected for monitoring using port staff and waste contractor staff on a voluntary basis. However monitoring in some harbours did drop off at the later stages of the project. The monitoring data was entered into an Excel database.

The scope of the monitoring was never a main focus of the project but it was worthwhile to attempt to test if this type of monitoring could provide any relevant information.

As monitoring of bags was undertaken by volunteers, Guidelines for Monitoring Fishing for Litter Waste were developed to offer advice. As this was the first time this type of data collection had been attempted on this scale, it was understood that the methods employed would not meet established scientific criteria but that the data collected would be useful in getting an indicative picture of what was being caught. The overall numbers of items collected was 3,464. It was not possible to quantify how bags were monitored as some harbour only accounted for the number of skips rather the number of bags.

## Project Co ordination

The project was operated by KIMO UK, which is the United Kingdom network of the organisation, and has a Secretariat based in the Shetland Isles.

A project coordinator was appointed and was in post until July 2007 and a consultant subsequently undertook project coordination for the final months until June 2008.

The coordination of the project from Shetland was a distinct advantage to the project in terms of enhancing the credibility and reputation of the scheme due to the strong position Shetland holds within the fishing industry. This was particularly true in the early stages as the concept was being introduced to stakeholders. However it placed both management and financial constraints and challenges on the project due to its distance from the Scottish mainland.



Mallaig Harbour © KIMO

## Observations

The concept of Fishing for Litter as an effective method to engage one of the main stakeholders to reduce marine litter at sea has received considerable support within the industry. It has also been able to demonstrate that through a central coordination role the project has been able to apply a consistent and uniform approach nationally, taking account of local conditions. The national network of harbours has enabled registered vessels to actively participate where they were operating in Scotland. The project has met all its objectives except one.

The project has been fortunate in receiving high profile publicity through local launches and popular TV programmes such as Landward. This has not only helped in encouraging the industry to participate but has highlighted the marine litter issue generally to the general public. The Fishing for Litter brand is well known especially in fishing communities.

As a concept there are still avenues to explore to enhance and improve the operational aspects of the project and challenges to encourage better participation within the industry.

The Fishing for Litter initiative has demonstrated on a countywide scale that the objectives and aims of the scheme can gain the support of the fishing industry, port authorities and local authorities. Furthermore, it can contribute to changing practices and culture within the fishing sector, provide a mechanism to remove marine litter from the sea and seabed, and raise awareness among the fishing industry, other sectors and the general public.

Scotland can take credit in taking the lead in an initiative that has caught the imagination of many different interests. It has created an appeal in other parts of the UK to implement similar schemes with initiatives being operated in Wales, South West England and the Isle of Man. Political support has been forthcoming at the Irish/ British Council and at OSPAR.

## Project Sponsors

**Aberdeenshire**  
COUNCIL



**SCOTTISH EXECUTIVE**



**Comhairle Nan Eilean Siar**  
Western Isles Council



**Highlands and Islands Enterprise**  
Iomairt na Gaidhealtachd 's nan Eilean

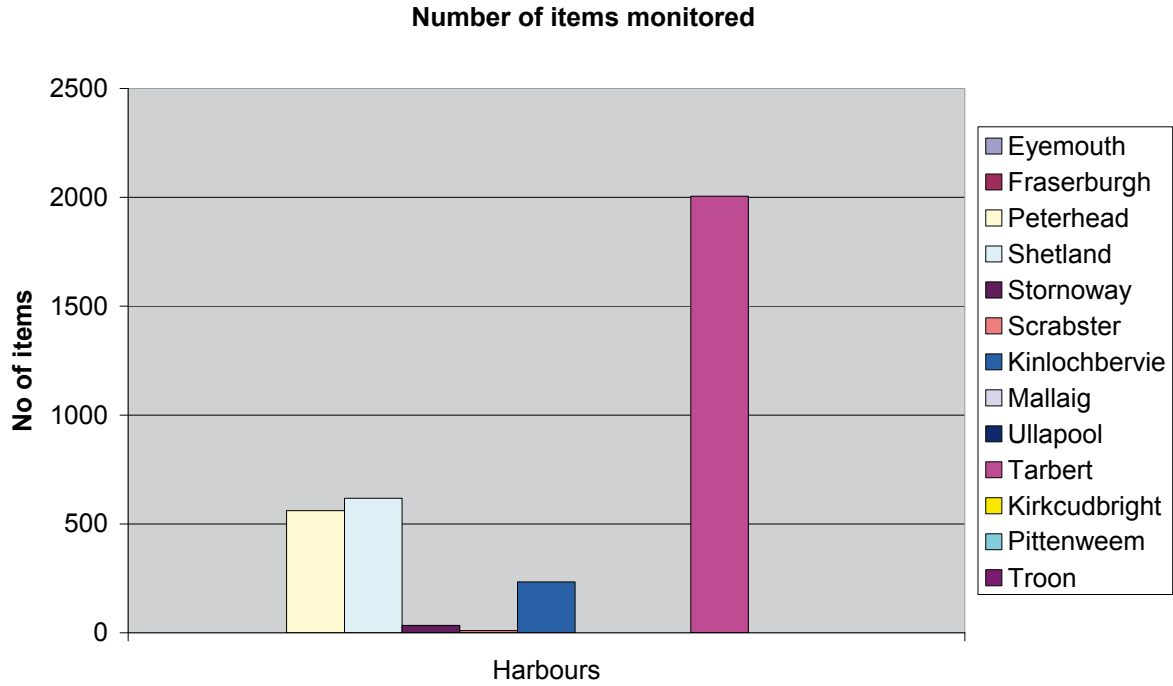


**Project coordinated by**



**KOMMUNENES INTERNASJONALE**  
MILJØORGANISASJON

## Appendix 1



There was clear evidence that, similar to the OSPAR Beach Monitoring Programme and studies of plastics in fulmar stomachs, plastics and polystyrene were the predominant type of marine litter with metals in second place. The two types of waste contributed to 74% delivered in those six harbours.

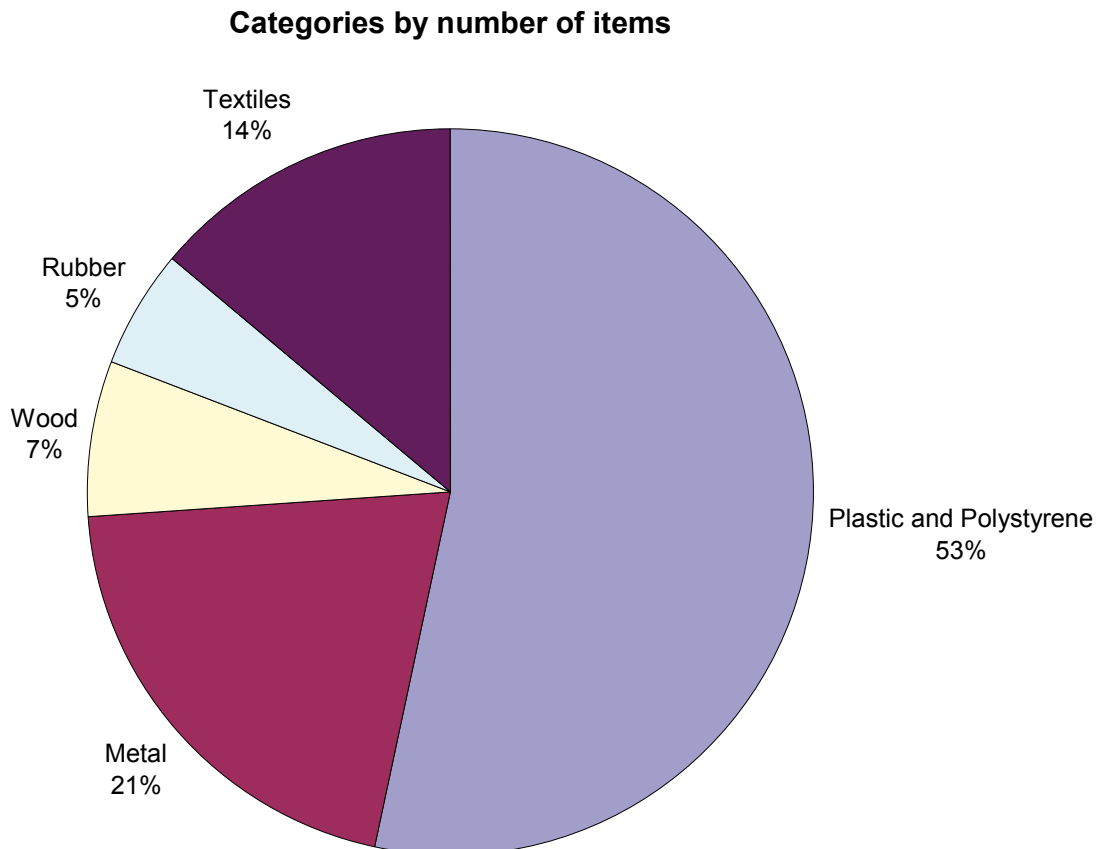
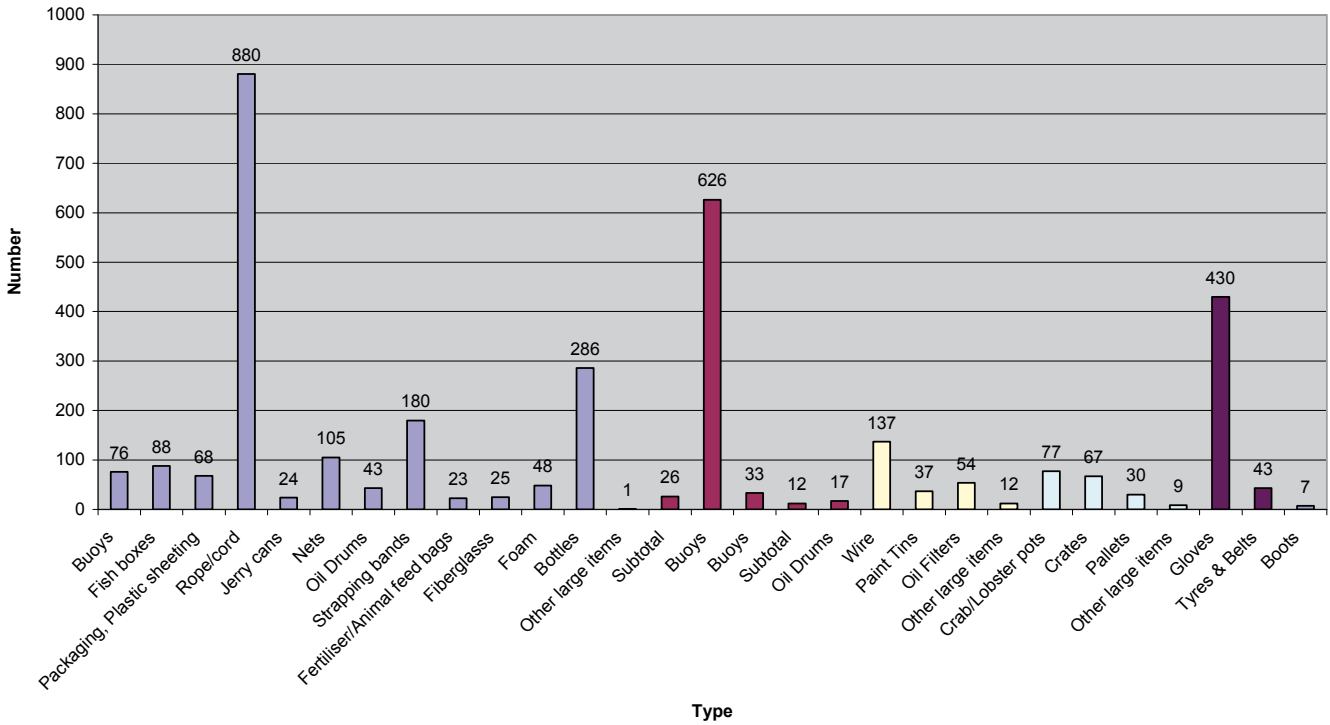


Figure : The number of items by type



There were also abnormalities that occurred such as high numbers of specific items such as plastic bottles, buoys, and gloves being noted in some harbours. It was not possible to identify the causes of these incidents.

One of the more useful uses of the monitoring programme was evidence that, in some cases, some galley waste started to appear in the bags. A letter was sent to all boats reminding them that only waste trawled up should be placed in the bags.

Marine Litter Collected

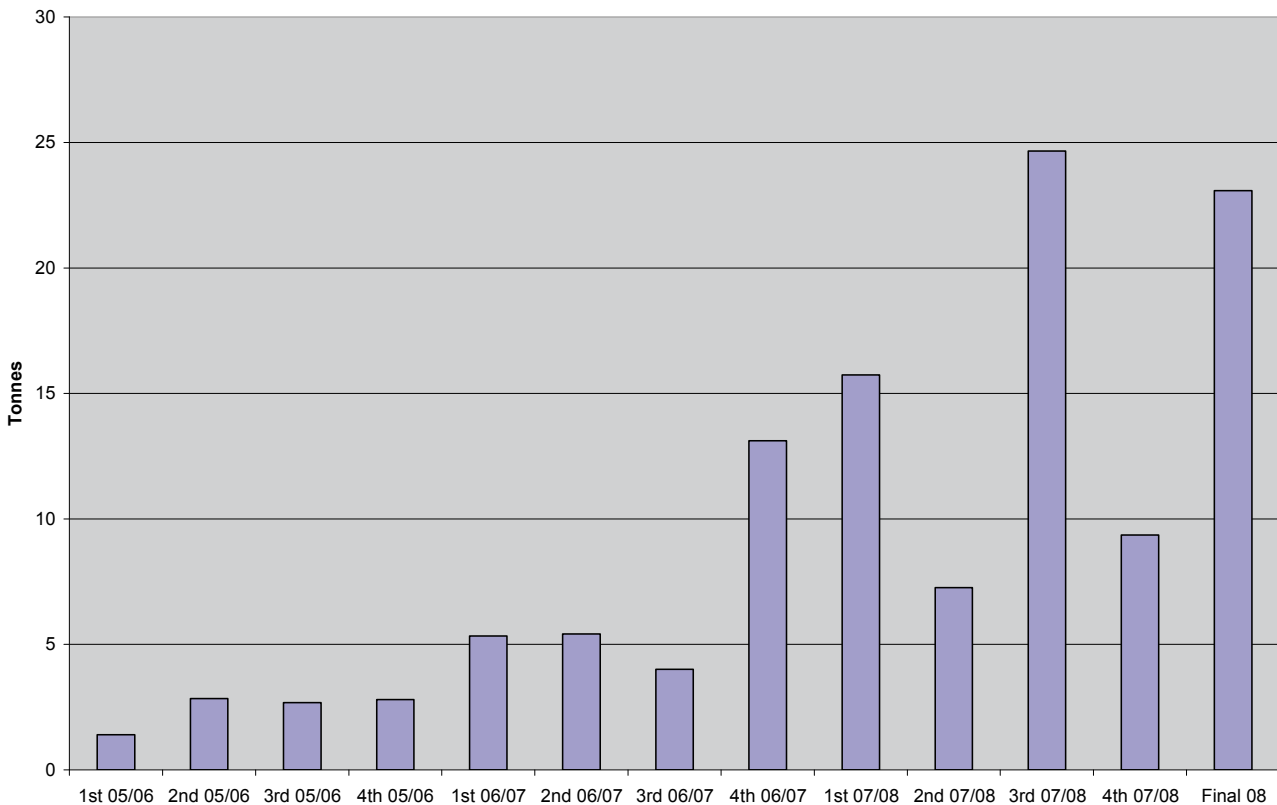


TABLE 1	<b>Fishing For Litter Tonnages</b>																
	2005/2006				2006/2007				2007/2008				Overall				
	1st 05/06	2nd 05/06	3rd 05/06	4th 05/06	1st 06/07	2nd 06/07	3rd 06/07	4th 06/07	1st 07/08	2nd 07/08	3rd 07/08	4th 07/08	Final 08	Total			
Harbour																	
Shetland (3)	0.76	0.2	0.2	0.24	1.26	1.32		2.52	1.6	1.36	0.4	0.26	1.88	12			
Peterhead	0.64	2.64		2.12	0.38	1.82	1.78	3.56	4.44	2.3	2.94	2.2	3.38	28.2			
Fraserburgh			2.48		2.82	1.52	2.22	1.5	3.32	1.8	2.68	3.54	3.76	25.64			
Aberdeen N/A										1.2			0	1.2			
Eyemouth											1.88		0.46	2.34			
Tarbert (2)					0.88	0.76		2.46	2.64	0.6	3.1	2.02	1.24	13.7			
Mallaig													1.76	1.76			
Kinlochbervie								3.07	1.64		1.42	1.34	1.54	9.01			
Stornoway				0.44							1.62			2.06			
Scrabster									2.1				1.42	3.52			
Kirkcudbright													1.5	1.5			
Troon (N/A)														0			
Pittenweem											2.06		1.44	3.5			
Ullapool											8.56		4.7	13.26			
<b>Total</b>	<b>1.4</b>	<b>2.84</b>	<b>2.68</b>	<b>2.8</b>	<b>5.34</b>	<b>5.42</b>	<b>4</b>	<b>13.11</b>	<b>15.74</b>	<b>7.26</b>	<b>24.66</b>	<b>9.36</b>	<b>23.08</b>	<b>117.69</b>			

# Bag Monitoring Sheet\*

Number of Bags 

For monitoring marine litter brought ashore as part of the Fishing for Litter project

Location: \_\_\_\_\_

Material	Example item	Total No.
Plastic and Polystyrene		
1	Buoys	
2	Fish boxes	
3	Packaging, plastic sheeting	
4	Rope/cord	
5	Jerry Cans	
6	Nets (including fishing nets and fishing line)	
7	Oil drums	
8	Strapping bands	
22	Fertiliser/Animal Feed bags	
23	Fiberglass	
24	Foam	
25	Bottles	
9	Other large plastic/polystyrene items ( <i>please specify below</i> )	
Metal		
10	Oil Drums	
26	Wire	
27	Paint Tins	
28	Oil Filters	
11	Other large metal items ( <i>please specify below</i> )	
Wood (Machined)		
12	Crab/lobster pots	
13	Crates	
14	Pallets	
15	Other large wooden items ( <i>please specify below</i> )	
Rubber		
16	Gloves	
17	Tyres & Belts	
29	Boots	
18	Other large rubber items ( <i>please specify below</i> )	
Textiles		
19	Rope	
20	Clothing & Shoes	
21	Other large cloth/textile items ( <i>please specify below</i> )	

## Special Observations and Notes (Please note the material number)

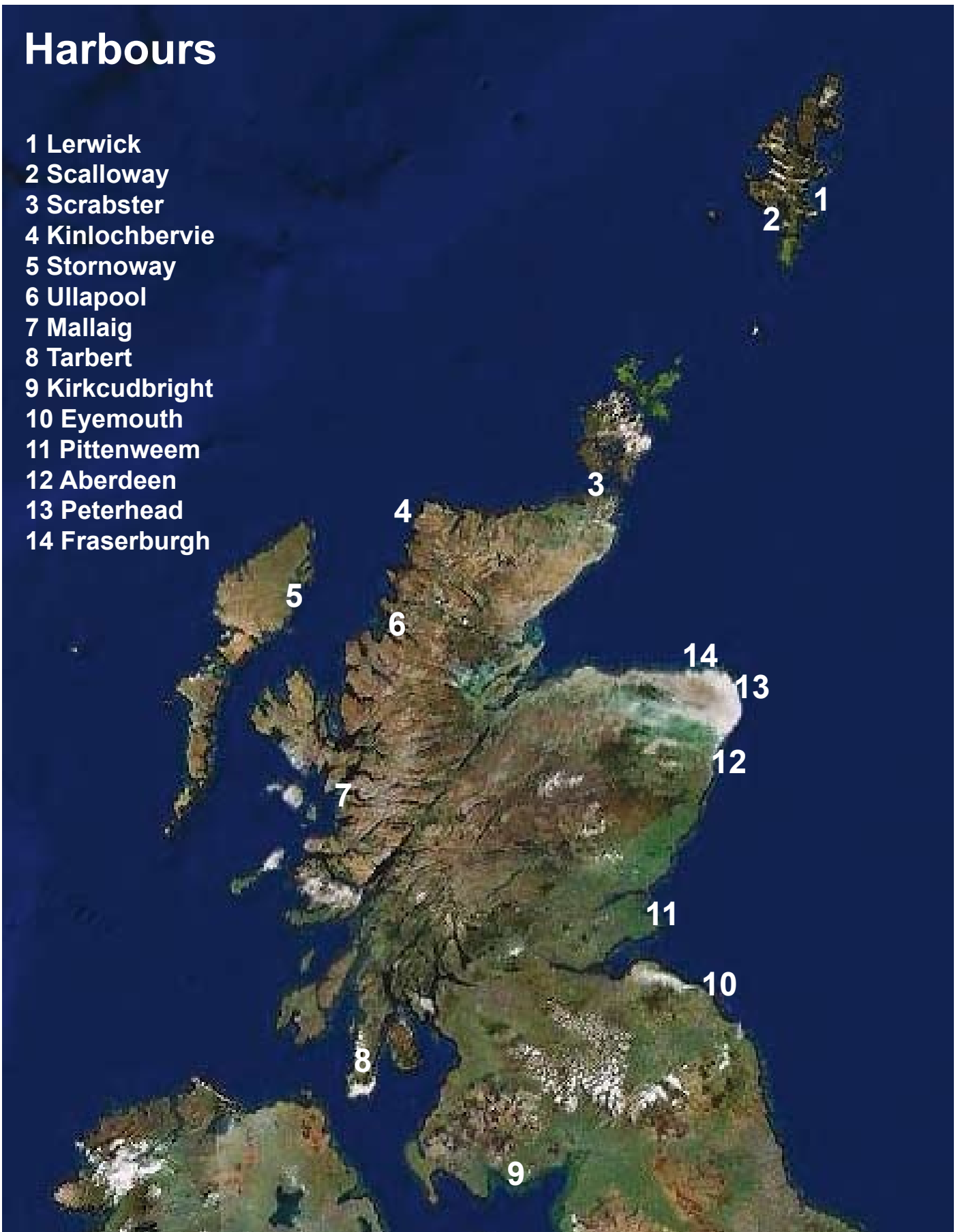
Please return to John Mouat, Fishing for Litter Co-ordinator: Fax 01595 744804  
or KIMO, Infrastructure Services, Grantfield, Lerwick, Shetland, ZE1 0NT

\*Adapted from the OSPAR Pilot Project on Monitoring Marine Beach Litter Monitoring Protocol



# Harbours

- 1 Lerwick
- 2 Scalloway
- 3 Scrabster
- 4 Kinlochbervie
- 5 Stornoway
- 6 Ullapool
- 7 Mallaig
- 8 Tarbert
- 9 Kirkcudbright
- 10 Eyemouth
- 11 Pittenweem
- 12 Aberdeen
- 13 Peterhead
- 14 Fraserburgh



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**Fishing For Litter**



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