



**FINAL REPORT**

**FISHING FOR LITTER SCOTLAND 2008 –2011**



**Fishing For Litter**





## Ministerial Foreword

Marine litter is now recognised throughout the world as a threat to our precious marine environment that needs to be addressed. That's why it is my ambition that Scotland leads the way on this important issue.

We need a new marine litter strategy to complement our world-leading zero waste agenda, build on Scottish efforts to reduce marine litter and contribute to co-operation with other countries under the EU Marine Strategy Framework Directive.

I believe Scotland is well placed to rise to this challenge. KIMO is internationally recognised as the leader on marine litter issues and is based in Shetland. It has worked over many years to raise awareness of marine litter and tackle the problem head on. The strength of our marine science sector means we can access the best scientific expertise and support. And our coastal communities also recognise the issues around marine litter and have made a massive contribution so far. Harnessing that enthusiasm and potential will be just as important in the future.

The Fishing for Litter scheme is an excellent example of what can be achieved through imaginative solutions and partnership working. It is a credit to KIMO, the fishing industry and other partners that over 160 boats participated in the scheme. KIMO's promotion work has also ensured that examples of best practice are more widely available.

I am pleased that the Scottish Government has been able to extend our financial support for KIMO's work, with a new phase of the Fishing for Litter scheme launched in May. I look forward to further successes and I'm sure Fishing for Litter will remain an important part of our strategy in the years to come.

*Richard Lochhead*



## Introduction

Fishing for Litter Scotland (FFL) is an environmental project undertaken by KIMO UK, designed to engage the fishing industry in marine litter issues, to improve waste management practices and reduce the amount of marine litter in our seas by physically removing it.

Fishing for litter is a simple idea. Participating vessels are given hard wearing bags to collect marine litter that is caught in their nets as part of their normal fishing activities. Full bags are deposited on the quayside where the bag is then moved by harbour staff to a dedicated skip for disposal. Operational or galley waste generated on board, and hence the responsibility of the vessel, continues to go through the established harbour waste management system.

The project provided the bags and covered the waste costs and the fishermen and harbour staff volunteered their time. The project was co-ordinated by a part time post holder who managed all aspects of the project.



Photo: Karen Murray

## KIMO UK

The project was run by KIMO (Local Authorities International Environmental Organisation), an association of coastal local authorities whose goal is to eliminate pollution from Europe's Northern Seas. The organisation's members include local authorities 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. KIMO UK is the United Kingdom network of the organisation.

For more information see [www.kimointernational.org](http://www.kimointernational.org)

## Marine Litter

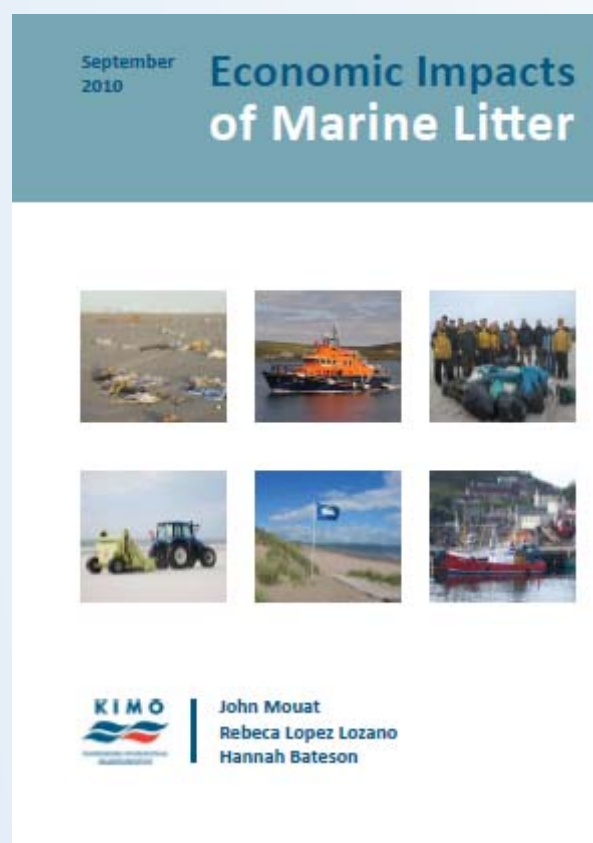
Marine litter is defined as “any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment. Marine litter consists of items that have been made or used by people and deliberately discarded into the sea or rivers or on beaches; brought indirectly to the sea with rivers, sewage, storm water or winds; accidentally lost, including material lost at sea in bad weather (fishing gear, cargo); or deliberately left by people on beaches and shores.” (UNEP 2005: 3)

It affects many sectors and the fishing fleet is both a recognised source of marine litter and a victim of the increasing amounts in our seas. The KIMO report on the Economic Impacts of Marine Litter (Mouat, Lopez Lozano and Bateson, 2010) found that rubbish costs the Scottish fishing fleet approximately £11.5 million each year. Dumped catch, repairs to gear and lost fishing time due to marine litter costs each vessel in the Scottish fleet between £15,000 and £17,000 each year.

In addition to this huge amounts of litter wash up as an eyesore on our coastline every year that costs local authorities money to clear up, ultimately costing us more in taxes.

Marine litter can have a severe impact on marine life and incidents involving litter are very common.

Litter can affect wildlife, such as seals, whales and turtles as well as seabirds, either through entanglement by ropes and fishing gear or by ingestion of different types of marine litter. Therefore it is in everyone’s interest to ensure that there is as little marine litter as possible.



## Project Aims

Fishing For Litter had four main aims:

- The direct removal of litter from the seabed and marine environment
- To raise awareness amongst the fishing industry resulting in a change in attitudes and behaviour
- To monitor the marine litter coming ashore to establish any regional or variation or trends
- To investigate the possibility of recycling the marine litter coming ashore.



## Project Targets

The project had several targets:

- Establish a network of 15 harbours around Scotland
- Involve 200 boats
- Land 200 tonnes of marine litter.
- Recycle 10% of the waste landed.
- Involve the pelagic fleet.



The image shown above, kindly provided by John Butterwith, Chief Executive of the North Devon Fishermen's Association, highlights how marine litter can become entangled in nets.

## Project Timing

The three year project was initiated on the 1<sup>st</sup> of April 2008 and operated until end of March 2011.

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.

## History

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.

Pilot schemes, operated by KIMO International, were run as part of the Save the North Sea Project in Scotland, Sweden, Netherlands and Denmark until 2005 and the Scottish project has continued this good work since.

Scottish fishermen have demonstrated how successful the project can be as numbers of participating harbours and vessels have steadily increased as word has spread about how effective and easy to operate the project is.

## Beneficiaries

As mentioned already reducing levels of marine litter will benefit fishermen themselves as marine litter currently 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 the public and local authorities who are required to clean amenity beaches. 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.

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 Murray & Cowie (2011) has found that 83% of Nephrops caught in the Clyde contained plastics in their stomachs.



## Harbours

The project aimed to establish a network of fifteen participating harbours around Scotland but has successfully managed to establish a network of seventeen harbours. They were Lerwick, Cullivoe, Scalloway, Fraserburgh, Peterhead, Eyemouth, Kirkcudbright, Troon, Campbeltown, Rothesay, Tarbert (East and West Loch), Mallaig, Ullapool, Kinlochbervie, Stornoway and Scrabster. An eighteenth harbour, Pitenweem, was also involved in the project but was withdrawn due to a lack of participation. The vessels operating out of Pitenweem were too small and did not have the room for an additional bag. Participation has been disappointing in Stornoway and Mallaig and the involvement of these harbours will be reviewed as the project moves forward.

## Boats

The project aimed to involve 200 trawler boats in the scheme but had to stop recruiting to the scheme at 162 as it became evident that the project budget could not cope with the significant amount of waste that was being landed above the anticipated amounts. Because of the simple nature of the project it is also thought that some boats may have been taking part in the project without officially registering and thus the actual number of boats landing marine litter in Scottish harbours maybe higher.

After discussions with the Scottish Pelagic Fishermen's' Association 12 pelagic vessels signed up to the project. Although the amount of litter they land is minimal, due to the mid-water nature of their fishing, it was felt important to involve the fleet and to spread the awareness of marine litter.





## Waste

A target was set to land 200 tonnes of marine litter. At the end of the three year project 242.1 tonnes had been landed. This is a fantastic total but as discussed above it did stretch the budget. As the graph below shows there has been an increasing trend in the amount of litter landed each quarter throughout the duration of the project.

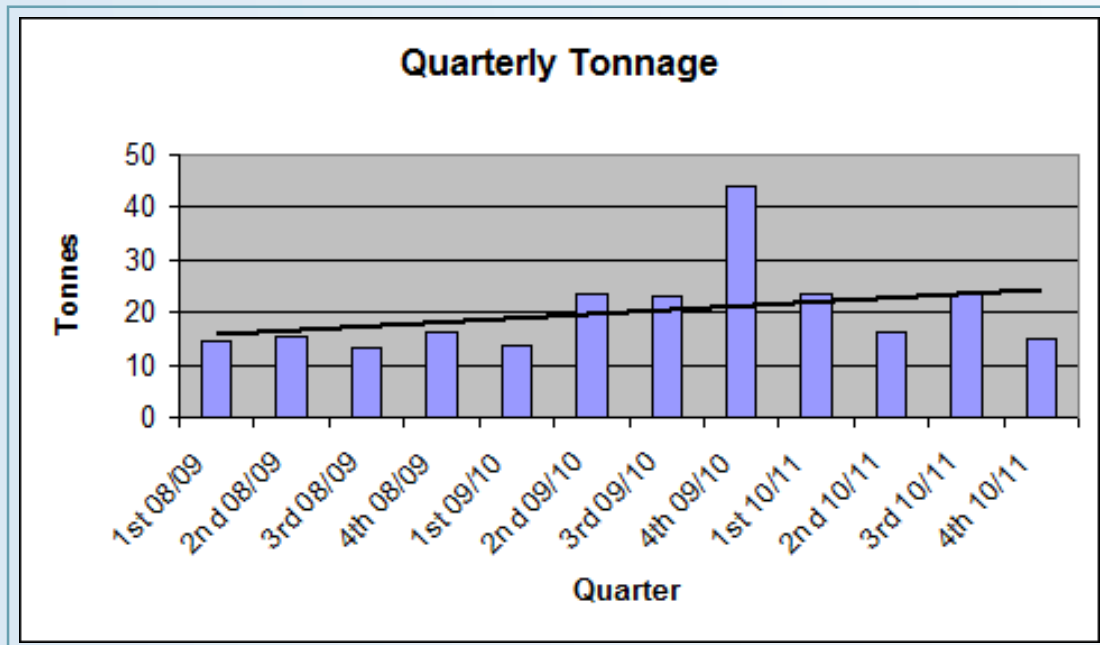


Figure 1

## Monitoring

There were two aspects of the monitoring, 1) a running total of all the marine litter landed as part of the project was kept, all skips were weighed as they were delivered to licensed waste disposal sites and this data was collected through waste invoices. 2) In some harbours staff volunteered their time to analyse the bags and record the composition of the litter landed.



Monitoring took place in a small number of harbours. The monitoring data was entered into an Excel database that was used to analyse the data. The monitoring was a secondary focus of the project but it provides enough information to give an idea of the types of rubbish that pollute our seas.

As monitoring of bags was undertaken by volunteers, guidelines for monitoring Fishing for Litter waste were used. 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 monitoring data was analysed to try and identify the types of waste landed. Figure 2 shows the composition of the marine litter landed by material type.

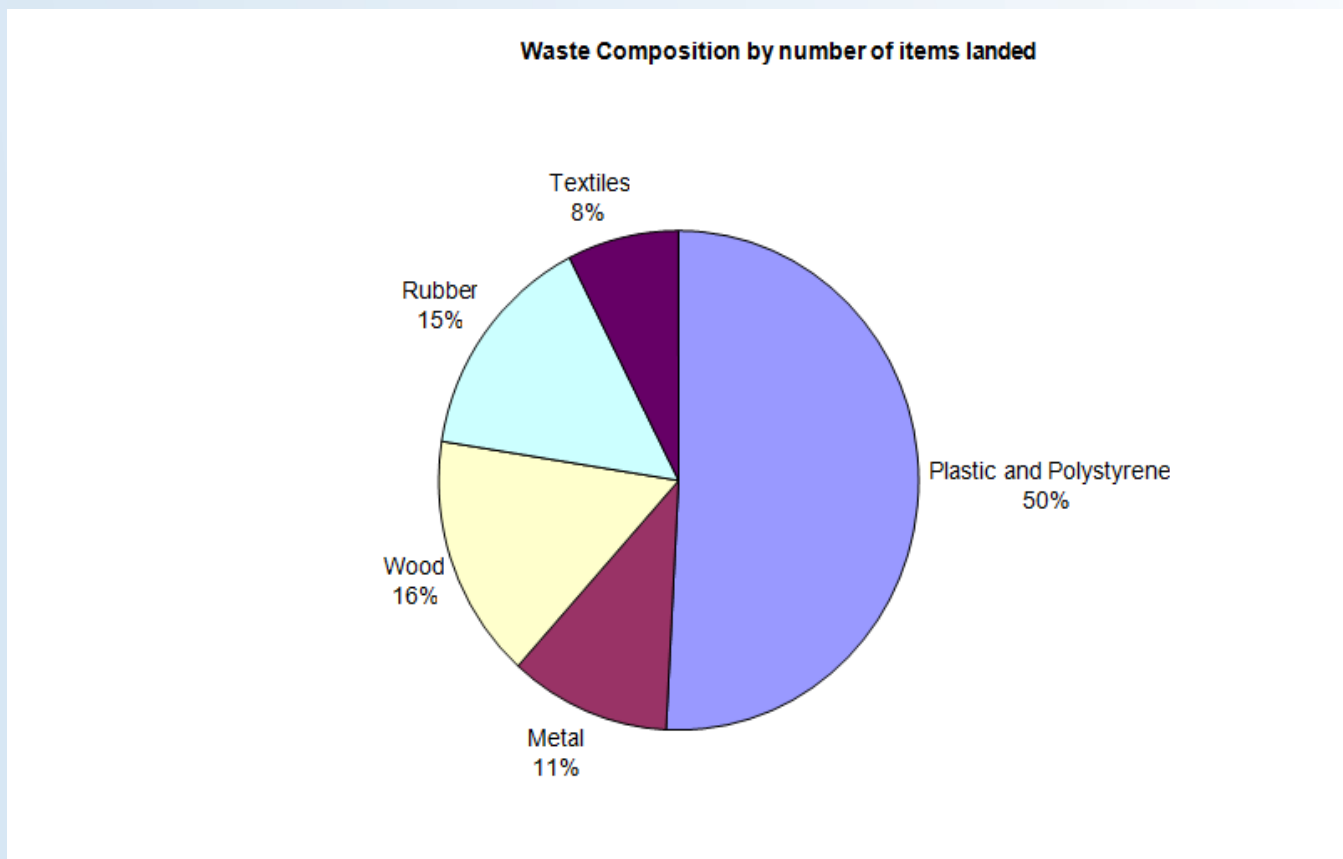


Figure 2

The chart clearly shows that plastic is the most abundant type of litter landed by the number of items. This is in line with other marine litter surveys. Plastic stays in the marine environment for hundreds of years and breaks down into smaller and smaller pieces that endanger wildlife. The amount of heavy metal objects is higher than beach monitoring but this would be expected as these items are more likely to sink than be washed up on a beach. There is anecdotal evidence that regularly fished grounds are being cleared of heavy items such as metal, skippers report that they are picking up less litter of these types in regularly fished grounds.

Appendix 1 shows a more detailed breakdown of the litter by litter item.

## Recycling

It was hoped that up to 10% of the waste could be recycled. Some of the waste landed in Shetland was sent to the local energy from waste plant. Seventy percent of waste on the island goes to the plant, assuming that the same proportion of Fishing for Litter waste was also burnt for energy then a potential 2.5% of the marine litter landed by the project was recycled.

In other areas where the project operated recycling targets were not met. Two explanations were given for this 1) Because the material landed had spent time at the bottom of the sea it was often covered in marine growth and therefore considered too contaminated for recycling and 2) Because the participating harbours are located in more peripheral areas of Scotland and the comparatively low tonnages compared to other waste streams the waste processors would have only considered recycling if the waste was pre-sorted.



It was felt that asking fishermen and/or harbour staff, who volunteer their time to make the project work, would have a negative effect on the number of boats taking part in the project and therefore the amount of litter removed from the marine environment.

Potential avenues for recycling and reuse are still being investigated as the project moves forward into the next phase.

## Financial

The project had a projected budget of £154,350 and an actual spend of £196,105.35. The difference has been covered by an additional grant from the Scottish Government and an under spend from the previous project.

The amount of waste landed surpassed our expectations and this incurred extra waste management costs that strained the budget. The costs to recruit an appropriate candidate to manage the project were also much higher than envisaged.

## Promotional Material

The project has produced promotional leaflets (appendix 2) that provided information on the scheme. Upon joining the scheme skippers and their crews were given project information, full instructions, waste guidance notes and a window sticker to demonstrate their support of the initiative. A series of exhibition banners were created to promote the scheme at a number of meetings and fishing industry events.



Photo: KIMO UK

## Promotional Activities

The project exhibited at the Fishing 09 and Fishing 10 industry events held in Glasgow, this had two aims. Firstly it was a useful place to meet existing project participants and to sign up new boats to the scheme but it also gave the chance to liaise with other stakeholders and policy makers in an informal setting.

Presentations were also given at local, national and international meetings to encourage backing for the initiative and to share best practice. These meetings often result in the offer of in kind help to drive the project forward. For example Seafood Scotland offered help in maximising press exposure and spreading the word within the industry.



Photo: KIMO UK

## Press Coverage

The project issued nine press releases over the three years to highlight project achievements and milestones, they achieved coverage in industry publications, local and national newspapers and on numerous internet sites.

The project featured on a number of local and national radio stations with some including interviews with the project coordinator.

The project featured in news bulletins on ITV's Daybreak News and BBC 1 Scotland News bulletins



Photo: Karen Murray

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## Analysis

The project hit two of its three headline goals. It would have been achievable to sign up 200 boats to the project but the project budget could not cover the increased amount of waste that they would have landed.

The project has 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.

Identifying a recycling route for the waste, or increased incineration for energy, remains a challenge but positive steps have been made and hopefully headway can be made on this matter in the near future.

The project has been fortunate in receiving high profile publicity, this has not only helped in encouraging the industry to participate but has highlighted the marine litter issue to the general public. The Fishing for Litter brand is well known especially in fishing communities. There are still avenues to explore to enhance and improve the project, in particular to encourage full participation in target harbours.

## Fishing For Litter and Policy

Based on the success of the pioneering Scottish project, Ministers at the North Atlantic marine protection convention, OSPAR, approved a Recommendation (2010/19) encouraging participating member states to facilitate Fishing For Litter initiatives in their own fishing ports (appendix 3).

The scheme is also being discussed by European governments as a method help to achieve Good Environmental Status (descriptor 10) as part of the Marine Strategy Framework Directive where they must ensure that the amount of marine litter in the marine environment does not cause harm.

The project has forged links with the Seafish Responsible Fishing Scheme (RFS), to ensure that the drive by regulators and supermarkets to improve sustainability, also results in a change of behaviour towards litter.

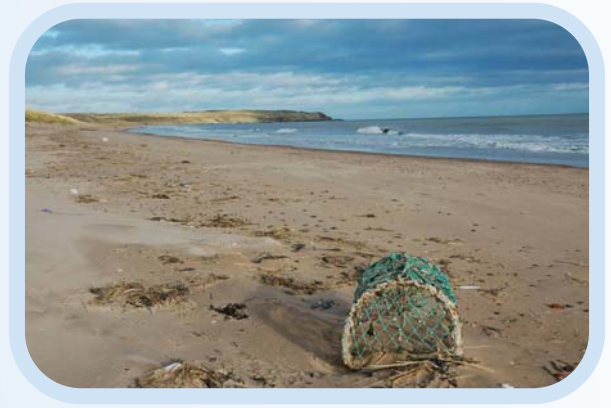
Seafish have advised that as part of their proposed review of the RFS they intend to embed a requirement stipulating that where Fishing For Litter programs are running in ports of landing, RFS member vessels should take part.

The project is also being considered by the Scottish Government as a tool to help tackle marine litter as part of its marine litter strategy which is currently in development.



## The future

The project has successfully secured funding to continue for another three years (2011-14) and the project will focus on 1) Increasing the number of boats involved in the project, 2) Increasing the education activities of the project and 3) to identify waste treatment options that may divert the waste from landfill.



## Conclusions

The Fishing-for-litter initiative has demonstrated on a countywide scale, that the concept of the scheme can gain the support of the fishing industry, port authorities, local authorities and other sea users. 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 of wider marine litter issues. The project has received considerable support from within the industry and from external stakeholders. The national network of harbours has enabled registered vessels to actively participate where they were operating in Scotland.

The number of boats signed up by the project has been limited by the budget, more boats could have been actively recruited if funds were available. Signing boats up to the project relies on a very proactive approach but it must be noted that once boats are involved landing litter caught at sea quickly becomes part of their normal practices.

It is disappointing that the waste sent to landfill was subject to landfill tax, an escalator tax designed to reduce the amount of waste sent to landfill that works on the polluter pays principal. The Fishing For Litter project is not a polluter but an innovative scheme that clears up other peoples waste, usually from an unknown origin. Requests made by the project to exempt it from the tax, in line with other dredging activities, were quickly rebutted by HM Treasury.

The recycling rate of Fishing for Litter waste has been low but this is primarily a reflection on the waste services industry in Scotland. The majority of providers suggest that recycling could only take place if the waste was pre sorted and asking Fishermen and/or harbour staff, who volunteer their time, to sort the waste would discourage participation in the scheme.

The number of tonnes of litter landed by Scottish fishermen exceeded expectations even with fewer than anticipated participant vessels. This result indicates that boats that begin the scheme are fully engaging in bringing marine litter ashore. Many skippers see the benefits, particularly the economic benefits, and see the removal of marine litter from our seas as common sense. They report, anecdotally, that they are catching less heavy litter in the most fished grounds.

The data provided by the monitoring of some waste highlights the wide variety of litter types landed by the project and in particular highlights the prevalence of plastic waste in our seas, an issue that policy makers must address.

Although improvements in the regulation and enforcement of litter offences are essential tools in reducing the problem, it is unlikely that it will achieve the behavioural change required alone. It will be important to engage marine industries in a way that they take ownership of the problem and work towards a solution and Fishing for Litter can be an effective tool to facilitate that change in the fishing industry. The project also successfully tackles the legacy of years of littering by all sectors of society.

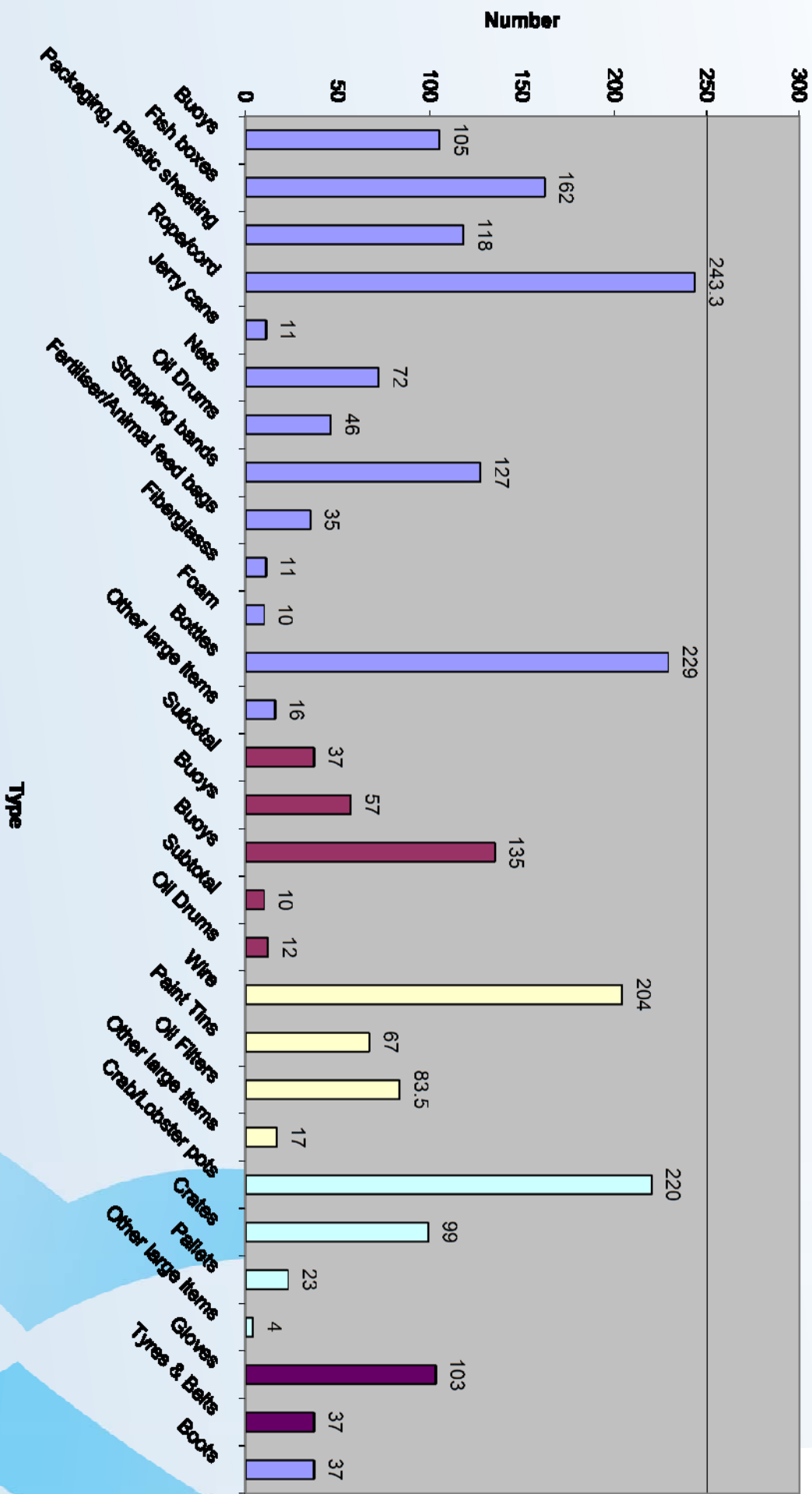
As a concept there are still avenues to explore to enhance and improve the operational aspects of the project and challenges to encourage wider participation within the industry.

The project could not operate successfully without the efforts of Fishermen and harbour staff who have volunteered their time and KIMO UK would like to thank everybody for their help.

## Project Sponsors



# Appendix 1 : The numbers of items by type





# Fishing for Litter Scotland

15 harbours 200 Boats 200 Tonnes

## What is Fishing for Litter?

The Fishing for Litter project 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 project was to clear the North Sea from litter, by bringing ashore the litter that is trawled up as part of fishing activities and disposing of it on land. This is achieved by providing large hardwearing bags to the boats so the waste can be easily collected and deposited on the quayside. This work was continued during the Fishing for Litter Scotland (2005-08) project.

## Why become involved in Fishing for Litter?

Quite simply because marine litter costs money. In our report on the Impacts of marine Debris and Oil (Hall, 2000) KIMO interviewed Shetland Fishermen as to the costs associated with marine litter. In the worst case scenario marine litter could cost each boat up to £30,000 per year in lost time, damage to nets, fouled propellers and contaminated catches. Over the time of the Save the North Sea project it was calculated that on average in the North Sea each tonne of marine litter cost fishermen £1,300 in lost time alone.



“We picked up a drum with green deck paint which destroyed 20 boxes of fish and took us about 4 hours to clean off the boat winch”, Shetland Fisherman. In addition to this huge amounts of litter wash up as an eyesore on our coastline every year and thousands of marine animals die from entanglement in and ingestion of marine litter. Therefore it is in everyone’s interest to ensure that there is as little marine litter as possible.



During the 2005-2008 Fishing for Litter Scotland project 110 vessels collected 117 tonnes of marine litter and brought it ashore at 15 harbours. The co-operation of the vessels and their crew was on a voluntary basis. Due to renewed sponsorship the 2008-11 project will expand on the previous work and Fishing for Litter will hopefully become an established fishing practice.



Fishing  
For Litter



## Funding

The project will run for three years and is funded through nine main sponsors: Crown Estate, Scottish Natural Heritage, The Scottish Government, Aberdeenshire Council, Western Isles Council, The Highland Council, Total, Peterson SBS and the Scottish Fisheries Trust. However it is KIMO's aim that Fishing for litter should continue beyond the next three years of the project and be funded permanently. A KIMO spokesman stated "We hope to hold a dialogue over this three year period with industry, government and other agencies on how to develop a national strategy for Fishing for Litter."



Comhairle Nan Eilean Siar  
Western Isles Council



## Aims of the Project

Fishing for Litter Scotland will establish a network of 15 harbours around Scotland. The goal is to make it straightforward for the boats involved to collect bags or drop off waste at their convenience. The scheme aims to encourage 200 boats to take part with the aim of collecting 200 tonnes of marine litter from the waters around Scotland over three years and recycling at least 10% on this litter. The project will also monitor a percentage of the waste that comes ashore as a result of the project. The aim is to try and identify the source of the litter and establish if there are any regional differences. The information will also be fed into international monitoring programs such as OSPAR's Marine Litter Monitoring Working Group.



## Project Co-ordination

The project is being co-ordinated by KIMO UK based in Aberdeen. KIMO (Local Authorities International Environmental Organisation) is an association of coastal local authorities whose goal is to eliminate pollution from the Northern Seas. The organisation's members include 115 local authorities representing over 6 million inhabitants in Norway, Denmark, Sweden, the Faeroe Islands, Germany, the Netherlands, Belgium, Great Britain, Republic of Ireland, the Isle of Man and the Baltic States.



## Contact details

If you are interested in taking part in the project please contact Mr Tom Piper on:  
Tel 01224 664725 - Fax 01595 744804 - Mob 07789790775 - Email [tom.piper@kimo.shetland.org](mailto:tom.piper@kimo.shetland.org)  
KIMO UK, Grantfield, Lerwick, Shetland, ZE1 0NT  
Website - [www.fishingforlitter.org](http://www.fishingforlitter.org)

## OSPAR Recommendation 2010/19 on the reduction of marine litter through the implementation of fishing for litter initiatives

RECALLING Article 2(1) of the Convention for the Protection of the Marine Environment of the North East Atlantic (“the OSPAR Convention”),

RECALLING Annex V to the OSPAR Convention on the protection and conservation of the ecosystems and biological diversity of the maritime area, and in particular its Article 3(a)(i), which makes it a duty of the OSPAR Commission to draw up programmes and measures for those purposes for the control of the human activities identified by the application of the criteria in Appendix 3,

RECALLING that the OSPAR Quality Status Report 2010 and the Joint Assessment by UNEP and the OSPAR Commission of the litter problem, in the North-East Atlantic have concluded that marine litter is a persistent problem, which originates from both sea and land based activities, that affects the entire marine environment and its ecological effects are not fully understood,

BEING AWARE of the social, economic and ecological impact of marine litter in the marine and coastal environment,

DESIRING to provide a means, through which Contracting Parties can reduce the amount of marine litter in their waters and address one of the main sources of marine litter through awareness raising and changes in behaviour.

**The Contracting Parties to the Convention for the Protection of the Marine Environment of the North-East Atlantic RECOMMEND:**

### **1. Definitions**

1.1 For the purpose of this Recommendation:

*“Fishing for Litter Initiatives”* means Fishing for Litter projects as outlined in the Guidelines on how to develop a Fishing for Litter project (OSPAR Agreement 2007-10).

*“Marine Litter”* means any persistent, manufactured or processed solid material discarded, disposed of or abandoned in the marine and coastal environment.

### **2. Purpose and Scope**

2.1 The purpose of this Recommendation is to promote the establishment of Fishing for Litter initiatives in fishing harbours of Contracting Parties and to facilitate:

- a. The raising of awareness of the social, economic and ecological impacts of marine litter among fishermen and within the fishing industry;
- b. a change in waste management practices within the fishing industry;
- c. the direct removal of marine litter from the marine environment within fishing areas.

### **3. Programmes and Measures**

- 3.1 Contracting Parties should promote the establishment of Fishing for Litter initiatives in line with OSPAR Agreement 2007-10 whereby:
- a. fishermen are provided, at no cost to them, with large hardwearing bags, or other suitable receptacles, in which they can collect marine litter that accumulates in their nets as part of their normal fishing activity. This does not include operational or galley waste from the vessel;
  - b. facilities are available for these bags to be deposited in harbour at no cost to the fishermen and disposed of, where possible, in line with the waste hierarchy: reuse, recycle, recover and dispose;
  - c. the number of vessels and harbours taking part in Fishing for Litter initiatives and the weight and, where possible, composition of the waste brought ashore is recorded locally and collected by Contracting Parties for OSPAR reporting purposes;
  - d. a communication plan is developed and implemented to promote the project and to raise awareness of fishermen and the fishing industry to the impacts of marine litter.
- 3.2 Contracting Parties should notify the details of their national contact for these initiatives to the OSPAR Secretariat.

### **4. Entry into Force**

- 4.1 This Recommendation has effect from 24 September 2010.

### **5. Implementation Reports**

- 5.1 Contracting Parties should report the information as referred to in paragraph 3.1(c) to the OSPAR Commission not later than 1 October 2013. Reporting will be annually thereafter.
- 5.2 When reporting on the implementation of this Recommendation, Part A of the reporting format at Appendix 1 should be used as far as possible (i.e. Contracting Party details, harbour details and monthly tonnages). Part B of the reporting format (i.e. monitoring data for harbours) should be used as appropriate, taking into account the points listed in footnote<sup>1</sup>.
- 5.3 By 1 January 2013 Contracting Parties should present to the OSPAR Commission:
- a. a short description of the initiatives that they have established to meet the aims of this Recommendation and experience of their implementation; or
  - b. an explanation why they have not established any such initiatives (e.g. descriptions of other initiatives which are equally effective in fulfilling the requirements of 3.1).
- 5.4 The OSPAR Commission will periodically review arrangements set out in this Recommendation in light of experience of its implementation. Such reviews will evaluate the success of Fishing for Litter initiatives, and will look at such factors as costs, benefits and governance. The first such review should take place not later than 31 December 2014.

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<sup>1</sup> Contracting Parties should decide nationally whether to record for each Fishing For Litter initiative the details requested in Part B of the reporting format, taking into account the following points (please note that the reporting method undertaken nationally should be documented in any results submitted):

1. Whether to include all harbours included in the FFL project, or a representative harbour for collecting the greater detail on litter types;
2. Whether to record the contents of each bag recovered, or a representative sample, for example; every tenth bag collected, or one bag monthly or one bag in every six months;
3. Whether to record only the main categories of material found for example 'Plastic and Polystyrene' or 'Metal', or sub-divide the findings into the defined categories under each heading. Please see data sheet on pink excel tabs;
4. How to best determine the amount of litter category in each bag, for example an estimate of likely content number of items of percentage of each category, or based on actual counting of litter items within the bag.





# Fishing For Litter

