

Report of the

# POLLUTION IN MORECAMBE BAY TASK GROUP

*- a report of Overview and Scrutiny*



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## **Foreword**

“Task Groups work best when they are dealing with concerns raised by members of the public and their local councillors. When the Overview and Scrutiny committee first heard about the problems being caused by abandoned vehicles on the shore it investigated the matter. That investigation highlighted how matters involving land around Morecambe Bay involve many different authorities and agencies - it also showed that lines of responsibility are not always clear. These initial investigations led to the establishment of this Task Group. Its hard work, commitment and research led initially to a change of focus for the Task Group; so plastics became the primary concern.

This report suggests ways of moving forward - and acknowledges that if real progress is to be made on the issue of pollution of the seas by plastic then it must be a truly international commitment. There are recommendations for our Council as well as an intention to campaign with support from our neighbouring authorities.

Can I thank all those who have been involved in what has been an interesting and rewarding Task Group.”

Councillor Stuart Langhorn  
Chairman  
Overview & Scrutiny Committee

## (1) **Introduction**

“The Task Group has worked hard and learnt a lot about plastic pollution which has made many of us change our ways in terms of plastic consumption and recycling. This has been a great piece of work and on behalf of the Task Group I would like to express my thanks to Dr Richard Thompson and Dr Jan van Franeker who shared their research with us and helped our work enormously. I would also like to place on record my thanks to Jenny Kay, Democratic Support Officer for her hard work on this project, Susannah Bleakley of Morecambe Bay Partnership and the Isle of Man Government for their input into this work.

Plastic pollution is a global problem and it does not affect just Morecambe Bay - I think all local authorities need to be reminded of the impact this is having and take action.”

Councillor Keith Budden  
Chairman  
Task Group

## **(2) Summary and Recommendations**

This report focuses on the work undertaken by the Pollution in Morecambe Bay Task Group.

The primary aim of this report has to be to raise awareness of the growing problem of marine litter not only in Morecambe Bay, but in all the world's seas and oceans. Members of the Task Group were shocked to hear the reality of this problem and the issues surrounding marine litter in the short time the Task Group had to complete its work. It was recognised that Lancaster City Council, a small local authority, could really do little on its own to tackle this global problem and it needs to gain support from other local authorities around the country to gain a voice that can be heard by the Government.

The Task Group was originally established to consider concerns regarding abandoned vehicles in Morecambe Bay.

The Task Group began its work by visiting the Bay to see for itself the offending abandoned vehicles. It then re-focused its work to examine plastic pollution and its impact on Morecambe Bay.

The world has become a plastic convenience culture; virtually every human being on this planet uses plastic materials directly and indirectly every single day. The Task Group heard evidence that every year people eat and drink from some thirty-four billion newly manufactured bottles and containers. Fast food restaurants add to this consumption of plastic and consume another fourteen billion pounds of plastic. In total, society produces an estimated sixty billion tons of plastic material every year.

Each of us on average uses 190 pounds of plastic annually: bottled water, fast food packaging, furniture, syringes, computers, computer diskettes, packing materials and so much more. This plastic does not biodegrade and remains in our ecosystems permanently, therefore there will be an incredibly high volume of accumulated plastic trash that has built up since the mid-twentieth century.

Where does plastic go? There are only three places plastic waste can go: the earth, the air and the oceans.

All the plastic that has ever been produced has been buried in landfills, incinerated, or dumped into lakes, rivers, and oceans. When incinerated, the plastics disperse non-biodegradable pollutants, much of which inevitably find their way into marine ecosystems as microscopic particles.

Approximately 70 per cent of marine rubbish sinks to the bottom, 15 per cent floats on the surface, and 15 per cent is washed up onto the coasts.

Marine litter has a large impact on the marine environment as more than 1 million birds and 100,000 marine mammals die each year from becoming entangled in or ingesting marine litter. Animals can often become entangled in discarded ropes and nets or trapped in plastic containers. Plastic strapping bands can also be dangerous for inquisitive animals such as seals. They swim through the bands catching them around their necks, the bands then cut into their skin as they grow.

Many different types of animals mistake litter for prey. Turtles have been known to ingest plastic bags as they resemble jellyfish while floating in the water. Also 97% of Fulmars (seabirds) in the North Sea have plastic in their stomach which can lead to a loss of physical condition resulting in breeding failure and in severe cases death.

### **Recommendation 1**

- (1) That Lancaster City Council takes the lead in recognising the impact plastic has not only on marine life in Morecambe Bay but the environment as a whole and establishes and signs the Plastic Pollution Declaration.
- (2) That the Council seek support from the Local Government Association, all local authorities in the country with a sea boundary, the Isle of Man Government, Welsh Assembly and Scottish Parliament in signing up to the Declaration and lobbies the UK Government and European Parliament to take action on plastic pollution.

### **Recommendation 2**

That the Council join KIMO International (Kommunenenes Internasjonale Miljorganisasjon), and assist them to introduce the 'Fishing for Litter' campaign in to Morecambe Bay and investigate if funding would be available from the Duchy of Lancaster to provide disposal for rubbish collected.

### **Recommendation 3**

- (1) That the Council contacts United Utilities to request awareness raising on sanitary disposal is carried out in the area in places such as schools, local colleges and the University.
- (2) That the Council ensures clear guidance on sanitary disposal is displayed in public toilets and all Council buildings.

### **Recommendation 4**

That the Overview and Scrutiny Committee be requested :

- (1) To continue to monitor cockling activity when the cockle beds re-open.
- (2) To request regular updates from the North Western and North Wales Sea Fisheries Committee on the Draft Regulation Order to control cockling activity, before its introduction.



## **(3) The original role of the Pollution in Morecambe Bay Task Group**

### **3.1 Terms of Reference**

The Task Group was originally set up by the Overview and Scrutiny Committee after concern was raised over abandoned vehicles that were left to sink into the sands of Morecambe Bay.

#### **Original Terms of Reference**

1. To define the areas in the Bay where abandoned vehicles and other fishing/cockling debris is located and to determine ownership of this land.
2. To clarify who has powers and responsibilities for controlling pollution/navigation/public safety problems in the bay.
3. To confirm with the proper authorities and experts that there is or is not a risk in terms of long-term pollution/ navigation/ public safety problems posed by abandoned vehicles and other fishing/ cockling debris.
4. To subject the research and rationale that there is no long-term pollution/ navigation/ public safety problems to scrutiny.
5. To understand at what level abandoned vehicles and other fishing/ cockling debris would pose a cause for concern.
6. To hold the various agencies/ public bodies and government departments to account on this issue.
7. To make evidence based recommendations to the appropriate authorities.

The Task Group began its work by visiting Morecambe Bay and mapping vehicles that had not yet sunk into the sand. Initial investigations took place with the relevant agencies to identify if the vehicles that had been abandoned were an environmental threat to the Bay. Through these investigations, it became clear that there would be a larger environmental impact in removing the vehicles that were now not visible, and it was considered less of a risk to let them remain in place. The Task Group was advised that agencies considered this issue a historic problem that would be controlled by the new Regulation Order that was to be introduced to control cockling activity in the Bay.

After just one meeting and two site visits, it became clear that the Task Group needed to change direction and focus on the emerging issue of plastic pollution as any further work on abandoned vehicles was felt unnecessary. The Task Group heard evidence from Susannah Bleakley of the Morecambe Bay Partnership on plastic pollution in the seas and felt this was the logical path to follow. The Task Group altered its Terms of Reference to reflect this and, with the agreement of the Overview and Scrutiny Committee, the Task Group continued its work under the Terms of Reference set out overleaf.

## **(4) The Change of Direction for the Task Group**

### **4.1 Amended Terms of Reference**

The Overview and Scrutiny Committee agreed the following amended Terms of Reference :

1. To investigate the impact plastic pollution has on Morecambe Bay including marine life and the environment as a whole.
2. To investigate what other local authorities and the Government are doing to control plastic pollution in the seas.
3. To confirm with the appropriate authorities and experts what action needs to be taken to address this growing problem.
4. To make evidence based recommendations to the appropriate authorities and to create a policy on plastic pollution for Lancaster City Council.
5. To consider any issues that arise relating to abandoned vehicles once the cockle beds re-open.

### **4.2 Membership of the Task Group**

The Group comprised of Councillors Keith Budden (Chairman), Anne Chapman, Tina Clifford, John Day, Sarah Fishwick, Tony Johnson, Rob Smith and David Whitaker.

The Task Group wish to place on record their thanks for the work undertaken by Jenny Kay, Democratic Support Officer for the Task Group.

The Group gratefully acknowledges the contributions and assistance given by:

- Susannah Bleakley of Morecambe Bay Partnership
- Dr Richard Thompson – University of Plymouth
- Dr Jan van Franeker – Wageningenur/KIMO
- Steve Callister - Isle of Man Government
- Martin Hall – Isle of Man Government
- South Lakeland District Council
- John Mouat – KIMO International
- Rick Nickerson – KIMO International
- Peter Loker – Corporate Director (Community Services)
- Ged Mc Allister – Senior Engineer
- Bob Houghton – North Western and North Wales Sea Fisheries Committee
- Friends of the Earth
- RNLI (Morecambe)
- Port of Heysham
- Marine Conservation Society
- DEFRA
- Ban the Bag
- Friends of the Earth
- Helen Annan – Morecambe Bay Partnership
- Ian Cumming – Chief Executive - North Lancashire Primary Care Trust
- Frank Atherton - Director of Public Health - North Lancashire Primary Care Trust

### 4.3 Timetable of Meetings

Date of Meeting	Who gave evidence?	Issues Scrutinised
04.04.06	Peter Loker – Corporate Director (Community Services) Ged McAllister – Senior Engineer James Doble – Principal Democratic Support Officer Jenny Kay - Democratic Support Officer	Terms of Reference and Work Programme Evidence from Officers
25.04.06	Mike Guy - RNLI	Site visit to RNLI
12.06.06	Chairman – Keith Budden	Site visit to see abandoned vehicles
31.07.06	Susannah Bleakley – Morecambe Bay Partnership Jenny Kay - Democratic Support Officer	Plastic pollution/Marine litter Abandoned vehicles update
04.10.06	Jenny Kay - Democratic Support Officer	Amended Work Programme and Terms of Reference  Isle of Man visit  Dr Richard Thompson's work on micro plastics  Dr Jan van Franeker's work on ingestion of plastic by sea birds
07.11.06	Jenny Kay – Democratic Support Officer	Report back from Morecambe Bay Partnership's AGM including evidence on the Regulation Order to control cockling activity in the Bay  Draft recommendations to date
05.12.06	Rick Nickerson and John Mouat - KIMO	The work of KIMO
07.12.06	Bob Houghton – North Western & North Wales Sea Fisheries Committee	Draft Regulation Order to control cockling activity in the Bay
17.04.07	Jenny Kay – Democratic Support Officer	Draft Final Report

## **(5) Status of this Report**

This report is the work of the Pollution in Morecambe Bay Task Group, on behalf of the Overview and Scrutiny Committee, and where opinions are expressed they are not necessarily those of the Overview and Scrutiny Committee or Lancaster City Council.

Whilst we have sought to draw on this review to make recommendations and suggestions that are helpful to the Council, our work has been designed solely for the purpose of discharging our work in accordance with the terms of reference agreed by the Overview & Scrutiny Committee. Accordingly, our work cannot be relied upon to identify every area of strength, weakness or opportunity for improvement.

This report is addressed to Lancaster City Council. It has been prepared for the sole use of the Council and the Task Group takes no responsibility for any Member or Officer acting in their individual capacities or to other third parties acting on it.

## **(6) Background and Context**

- 5.1 Members of the Overview & Scrutiny Committee, following a suggestion from a Member, agreed to undertake a piece of work investigating abandoned vehicles in Morecambe Bay.

It was agreed by Members of the Committee that a Task Group should be established to undertake this piece of work and investigate whether there was a pollution problem caused by abandoned vehicles in the Bay, and if this was not a cause for concern at present, how many more vehicles would it take for this to impact on the Bay's environment.

- 5.2 Subsequently, the Overview & Scrutiny Committee set up the Pollution in Morecambe Bay Task Group, a formal Task Group of 9 Members which would report directly to Cabinet.

- 5.3 The Group set up an initial programme of six meetings to undertake its work.

- 5.4 At the first meeting, the Task Group agreed the Terms of Reference and Work Programme that had been proposed by the Overview and Scrutiny Committee and considered background information on the Bay.

It also agreed to co-opt Mike Guy, Lifeboat Operations Manager, RNLI Morecambe and Cedric Robinson, Queen's Guide to the Bay as Special Advisers on the Task Group. It also felt appropriate to co-opt Councillors from South Lakeland District Council and Barrow Borough Council to work on this project.

- 5.6 The Task Group then undertook a visit to the RNLI building in Morecambe where car wrecks were charted and could be seen from the RNLI's office.

- 5.7 This was followed by a visit into the Bay itself from Hest Bank to see firsthand the car wrecks that were sinking into the sand.

- 5.8 Officers were requested to gather information from agencies who were involved in the cockling disaster and their views on abandoned vehicles in the Bay. This evidence was presented at the next meeting of the Task Group when Susannah Bleakley of the Morecambe Bay Partnership gave a presentation detailing the harm of plastic pollution to marine life and its long term impact.

It was at this point the Task Group realised that evidence from agencies confirmed abandoned vehicles to be a historic problem. The Task Group then submitted a request to the Overview and Scrutiny Committee to revise its Terms of Reference to investigate how Lancaster City Council could tackle plastic Pollution in Morecambe Bay.

- 5.9 Much research was undertaken on the issues surrounding plastic pollution and Marine litter which was reported back to subsequent Task Group meetings. This included a visit to the Isle of Man Government's Marine Awareness Day by the Chairman and Democratic Support Officer, where an update on the Task Group's work was given. Valuable evidence was gathered from Dr Richard Thompson and Dr Jan van Franeker on the impact Plastic Pollution is having on the world's seas and oceans.

Evidence was also gathered on KIMO (Kommunenenes Internasjonale Miljorganisasjon) and the Fishing for Litter campaign that the Isle of Man Government had just introduced.

- 5.10 Members of the Task Group were invited to the AGM of Morecambe Bay Partnership. Members heard from the North Western and North Wales Sea Fisheries Committee on the Regulation Order that was about to be drafted that would control cockling activity in the Bay. Having heard this, Members raised a number of concerns over what was going to be included in the Draft Regulation Order.

- 5.11 Consequently, the Task Group held a special open meeting to discuss the Draft Regulation Order in more detail. At this meeting, Ward Councillors and Parish Councillors joined the Task Group in giving views on what should be included in the Draft Regulation Order to protect people who work in the Bay and prevent more vehicles being abandoned in the Bay.
- 5.12 An informal meeting took place with representatives from KIMO (Kommunenes Internasjonale Miljøorganisasjon) to acquire further information on the organisation. Further details are set out later in the report.



**Left :**  
***A seal that swam into a plastic band used for packaging, when it was a pup. The packaging band did not expand as the seal grew and cut into its flesh. Sadly, this seal had to be put to sleep.***

**Right :**  
***Plastic packaging bands found on a beach.***



## (7) Reviewing the Evidence

Once the Task Group had changed its direction to focus on plastic pollution in the Bay, it became apparent early on that Lancaster City Council on its own could not even begin to impact on the global problem of plastic pollution that affect Morecambe Bay.

Investigations showed that there was not a vast quantity of research that had been undertaken on plastic pollution in the seas and oceans, its impact on the environment and what this held for the future if nothing changed.

Plastic waste, such as plastic bags, often becomes litter. For example, nearly 57% of litter found on beaches in 2003 was plastic. A significant amount of this litter comes through the sewerage system, some from sea vessels and is also washed out to sea from rivers.

### **RESEARCH**

Two prominent sources of research were identified – the work of Dr Richard Thompson and Dr Jan van Franeker.

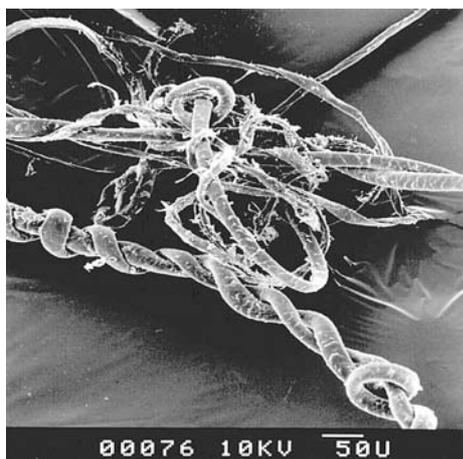
Through research into plastic pollution, the Chairman and Lead Officer for the Task Group were invited to attend a Marine Litter Awareness event in Douglas, Isle on Man to explain what the Task Group's objectives were. At this event, valuable information was gained from the world's two most prominent scientists in this field, Dr Richard Thompson and Dr Jan van Franeker.

#### **Dr Richard Thompson**

Dr Thompson's work uncovered the alarming amount of plastic fragments found in the sand on our beaches. Sand from different locations around the United Kingdom were analysed and microplastics were found. This research was carried out down to the size of the width of a human hair and it is obvious particles smaller than this exist in our sand. With most plastics being non bio-degradable, these micro plastics will just become more and more microscopic. (see Appendix A)

Research has also been undertaken on the amount of plastic that is found in plankton. Alarmingly plastic is found in plankton and other filter feeders in all of the world's oceans and is increasing over the years. Plastic eventually breaks up into smaller and smaller pieces in the water and these are eaten by animals that filter feed such as crabs and plankton which in turn are eaten by small fish and these are eaten by larger fish. Marine mammals such as seals, whales and turtles eat these fish and end up with toxins accumulating in their bodies.

This must beg the question of whether the fish we eat have ingested plastic particles and therefore plastic is entering our food chain. Unfortunately, no research has been undertaken on this.



**Left :**  
***Scanning electron micrograph of fibre from a sandy beach in the UK***



## **Case Studies of Plastic Pollution**

### **Plastic Bags**

Officers undertook research on plastic bags and their alternatives as the Task Group could not find an expert to give evidence on this issue.

Initially, it was felt that bio degradable bags were the ideal solution to this problem and the Task Group was minded to include a recommendation that supermarkets replace plastic bags with bio-degradable alternatives. However discussions with Dr Richard Thompson steered the Task Group away from this recommendation.

The minimum standard for decomposition is 90% of the material has to be bio-degradable, which begs the question what happens to the remaining 10% ? These micro plastics will end up in the sea, our soil and our food chain as reported earlier.

A further concern was that these bio-degradable bags will only decompose under certain model conditions - Controlled composting conditions with a certain degree of humidity, temperature and acidity. The waste would also need to be shredded first.

Under these conditions, a plastic bag would decompose in 180 days. But the Task Group realised that these 'model' conditions would not be found in Morecambe Bay or any of the seas around the UK.

It was agreed that this recommendation should therefore focus on 'Bags for Life'. If supermarkets were forced to stop using the free cheap plastic bags and stronger more sustainable bags were introduced at a cost of a £1, people would re-use these bags time after time or bring alternatives. It is clear to the Task Group that an economic incentive is required.

In America where the plastic bag originated, consumers use brown paper bags to carry their purchases. This option is obviously much more environmentally friendly and it was thought could be explored as a further option by supermarkets. However, on closer inspection, the resource implications of this are staggering.

A study was carried out in France by Ecobilan for the retailer Carrefour (published in February 2004) and showed beyond doubt that paper bags are distinctly bad for the environment.

The study compared four types of bags: the single-use bags issued freely in supermarkets; biodegradable starch-based carrier bags; the re-usable 'Bag for Life' type carriers sold by supermarkets; and the large brown paper bags still used in many countries as an alternative to the plastic carrier, made from recycled paper.

The study examined energy and resource use and pollutant emissions over the whole lifecycle of the bags, including production of the raw materials, manufacture of the bags, transport to the retailer, and disposal at the bags' end-of-life, and assessed the environmental impact of each by examining their contribution to eight environmental indicators.

The results are startling. Paper bags were by far the worst performers of the four types of bag: consumption of non-renewable resources, water consumption, contribution to acid rain, greenhouse gas emissions, air quality, eutrophication of surface waters due to pollutants released during manufacture, and solid waste production.

*Cont...*

In some cases the differences are extraordinary: water consumption, for example, is 6 times higher for a recycled paper bag than for a single-use carrier, greenhouse gas emissions 3 times higher and eutrophication 14 times higher. Only on risk of litter did paper bags outperform the other three types. This remains true even taking into account the fact that 65% of single-use plastic bags are reputedly used again, as bin liners.

Friends of the Earth support the introduction of a tax on plastic bags as introduced in Ireland in March 2002 which saw a decrease of 90% of usage of these bags.

The Task Group feel that a tax on plastic bags and the introduction of 'Bags for Life' in supermarkets is the answer and would like the Government to apply pressure to the industry to create incentives for more Bags for Life.

*Source – Ban the Bag website*



### **Cotton Wool buds**

Although it may seem a tiny contribution to the masses of marine litter on our shores, a common object found on beaches are cotton wool bud sticks. These are flushed down the toilet and go through the system but, as the sticks are made of plastic, they are not broken down and end up washed out into the sea.



### **Recycling Targets**

The Government recently published the national packaging recycling and recovery targets for 2006 and beyond. These require 23% of plastic waste to be recovered by 2006, rising to 25.5% by 2010. This is compared to 68.5% for paper and 74.5% for glass in 2010.

The Task Group considered these targets and felt that the Government should be aiming higher with their plastic packaging recycling targets, as most plastic was not bio degradable and posed such a threat to the environment. The Task Group has grave reservations regarding the remaining 74.5%.

**Right :**

### **Government targets for recycling packaging waste**

*Business targets for packaging waste recovery, 2006-2010 (in %):*

	2006	2007	2008	2009	2010
Paper	66.5	67	67.5	68	68.5
Glass	65	69.5	73.5	74	74.5
Aluminium	29	31	32.5	33	35.5
Steel	56	57.5	58.5	59	59.5
Plastic	23	24	24.5	25	25.5
Wood	19.5	20	20.5	21	21.5
<b>Overall Recovery</b>	<b>66</b>	<b>67</b>	<b>68</b>	<b>69</b>	<b>70</b>
Min. Recycling *	92	92	92	92	92

Source - Defra

\* Target refers to the percentage of the overall recovery target that must be achieved through recycling materials (rather than energy recovery)

## **Balloon Releases**

The Council heard evidence gathered by Officers on the Marine Conservation's 'Don't Let Go' campaign to ban balloon releases. Whilst balloons seem innocent play things for children, when the Task Group heard the impact these balloons have on wildlife if they land in the sea, it was decided to include a recommendation that the Council supports the 'Don't Let Go' campaign. A copy of the Marine Conservation's leaflet is attached at Appendix C.

Evidence from the Marine Conservation Society concluded that the number of balloons and balloon pieces found on the UK's beaches has tripled in the past ten years.

The Task Group were surprised to learn that Morecambe Bay is home to Leatherback turtles. Balloon poses a real threat to these creatures as do plastic bags that land on the water and look remarkably similar to jellyfish to the turtle. The turtles consume these objects causing them to die of either asphyxiation or starvation. Evidence showed that dolphins whales, seabirds and other wildlife have all been killed by balloons. Animals become entangled in balloon ribbons and string which restricts their mobility and their ability to feed.

The Task Group heard evidence that latex balloons were often used as a bio degradable alternative to plastic balloons but these do not alleviate the problem as they take months or even years to break down.

These plastic objects are not only a cause for concern for marine life but are obviously a threat to any wildlife in the countryside where the balloons may land.

The Task Group has consulted the Council's Legal Services on the issue of banning balloon releases from the district and it would appear the Council can ban them from its own land but not from private land.

The Council can promote this campaign however and attempt to educate local people of the dangers posed to wildlife in the letting go of balloons.



**Left :**

Remains of a bunch of balloons found on a beach.

**Right :**

Remains of balloons found in the stomach of a Fulmar.



## **(8) The Way Forward**

### **Declaration**

Research by Officers concluded that there was little work being done in the country to tackle this growing problem. Lancaster City Council appears to be the first English local authority to attempt to tackle this issue. The Task Group agreed that the only way we could actually make a difference to Morecambe Bay and the impact to its environment, would be to lobby the Government and European Parliament to take action to reduce plastic consumption and encourage plastic recycling.

The Task Group has developed a declaration setting out how the Council would attempt to reduce its own 'in house' plastic consumption and try to reduce the impact plastic had on marine life in Morecambe Bay and the environment as a whole. This declaration would then be sent to the Local Government Association, all local authorities in the country, the Scottish Parliament, Welsh Assembly and Isle of Man Government requesting their support to lobby the Government by signing the Declaration.

### **Recommendation 1**

- (1) That Lancaster City Council takes the lead in recognising the impact plastic has not only on marine life in Morecambe Bay but the environment as a whole and establishes and signs the Plastic Pollution Declaration.
- (2) That the Council seek support from the Local Government Association, all local authorities in the country with a sea boundary, the Isle of Man Government, Welsh Assembly and Scottish Parliament in signing up to the Declaration and lobbies the UK Government and European Parliament to take action on plastic pollution.



## **DECLARATION ON PLASTIC POLLUTION OF THE MARINE ENVIRONMENT**

We acknowledge that :

- Plastic Pollution has a detrimental effect on the environment including our coastline, countryside and marine life.
- The use of plastics needs to be reduced before irreversible damage is done to the natural environment.

We encourage :

- The increased use of sustainable and recycled materials where possible.
- Businesses, suppliers, the community, voluntary sector, public agencies and local councils to reduce their packaging consumption and introduce alternatives to plastic carrier bags and plastic packaging.

We commit our Council to :

- Amend our procurement policy to reduce plastic consumables.
- Not use plastics such as balloons and plastic bags for marketing purposes.
- Encourage local businesses to find alternatives to single use plastic bags.
- Oppose Balloon releases in the District due to the negative impact on wildlife, ban releases and discourage the sale of helium filled balloons from Council owned land and support the Marine Conservation's 'Don't Let Go' campaign.

We urge the Government to :

- Introduce a tax on plastic carrier bags.
- Encourage supermarkets to introduce long lasting 'Bags for Life' at a cost to the customer.
- Discourage supermarkets and other retailers from using plastic in their packaging and encourage them to find alternatives.
- Encourage the Government to re-assess its national packaging recycling and recovery target of 25.5 % to be reached by 2010.
- Encourage manufacturers of cotton wool buds to use biodegradable materials such as paper or wood rather than plastic for the sticks of these buds.
- Raise awareness of responsible sanitary product disposal.

## **(9) Addressing Local Concerns**

### **8.1 Fishing for Litter and KIMO**

The Chairman and lead Officer were invited by the Isle of Man Government to their Marine Litter awareness event in September 2006. The Isle of Man Government had just introduced the Fishing for Litter campaign to four of its main harbours – Douglas, Peel, Ramsay and Port St Mary.

The Fishing for Litter campaign was started by the North Sea Directorate of the Dutch Fisheries Association in March 2000. The aim of the project was to clear the North Sea of 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 that waste can be easily collected and disposed of when the boat returns.

The Fishing for Litter campaign has also been established in Scotland where ten harbours are involved. It is hoped over a 100 boats will take part in the project with the aim of collecting 500 tonnes of marine litter from the waters around Scotland in the next 3 years. In the long term KIMO International hopes to persuade the Government to provide permanent funding for the scheme.

The Fishing for Litter Campaign is now co-ordinated by KIMO International (Kommunenenes Internasjonale Miljøorganisasjon) – an International Association of Local Authorities based in the Shetland Islands whose goal is to eliminate pollution from the Northern Seas.

KIMO was founded in Esbjerg, Denmark, in August 1990 to work towards cleaning up pollution in the North Sea. In 1994 it changed its remit to also include The Irish Sea, North East Atlantic and The Arctic Seas. It has over 128 members in 10 countries including the United Kingdom, Norway, Sweden, Denmark, the Netherlands, Belgium, and the Republic of Ireland with associate members in Germany, the Faeroes Islands and the Isle Of Man. National Networks exist in each country and hold meetings on a regular basis.

The organisation holds Non Governmental Organisation (NGO) status at the North Sea Ministerial Conferences, the Committee of North Sea Senior Officials (CONSSO) the Convention for the Protection of the Marine Environment of the North East Atlantic (OSPAR), the International Maritime Organisation (IMO) (as part of the WWF Delegation). It has links with the European Parliament and Commission and sends representatives to various stakeholder dialogue processes in various countries.

The main issues that KIMO International campaign on are Marine Pollution that effect coastal communities including the following :

- Nuclear Issues
- Pollution from Decommissioning of the Oil and Gas Industry
- Marine Litter
- Maritime Safety and Pollution
- Dumping at Sea
- Hazardous substances

Morecambe Bay does not have the same scale of fishing and trawling activity as some of areas where Fishing for Litter has been introduced but initial discussions with local fishermen indicate they would be willing to bring ashore any litter they find as long as provision is made for its disposal.



**Left :**  
***A seal that was rescued caught up in discarded fishermen's nets. This seal was lucky – it was cut free and survived its ordeal.***

The Task Group met with representatives from KIMO International and agreed that it would be beneficial for Lancaster City Council to become members of KIMO who would then aid the Council in introducing the Fishing for Litter Campaign to Morecambe Bay.

The Task Group felt that the support offered to local authorities by KIMO International in emergency situations such as the recent Cornish shipping incident would be invaluable to Lancaster City Council if such an emergency arose. The Task Group heard evidence from the Port of Heysham and the difficulties manoeuvring large ships into the Port which could result in a ship being damaged. KIMO International offer a range of Emergency Plan literature, support and guidance which would be a valuable resource in such emergency situations.

Further information can be found on KIMO International's website : [www.kimointernational.org](http://www.kimointernational.org)

### **Recommendation 2**

That the Council join KIMO International (Kommunenenes Internasjonale Miljorganisasjon), and assist them to introduce the 'Fishing for Litter' campaign in to Morecambe Bay and investigate if funding would be available from the Duchy of Lancaster to provide disposal for rubbish collected.

## **8.2 Sanitary Disposal**

The Task Group heard evidence from Susannah Bleakley of Morecambe Bay Partnership and was shocked to hear of the amount of sanitary waste that is washed up on the shores of Morecambe Bay and collected at litter picks.

The Task Group agreed that this was an educational matter and that the 'Bag it and Bin it' campaign needed further promotion in the area. It was thought it would be a good move to encourage United Utilities to promote awareness to young women in the areas schools, colleges and University and general awareness via the Council's responsible waste education programmes. It was felt that the Council itself should promote sensible sanitary disposal in its public toilets.

### **Recommendation 3**

- (1) That the Council contacts United Utilities to request awareness raising on sanitary disposal is carried out in the area in places such as schools, local colleges and the University.
- (2) That the Council ensures clear guidance on sanitary disposal is displayed in public toilets and all Council buildings.

### 8.3 Sharps



*Sharps box found on the shore at Silverdale*

It was brought to the attention of the Task Group that a sharps disposal box had been discovered on the shore at Silverdale. The Democratic Support Officer contacted the Primary Care Trust and arrangements were made for the box to be collected although the box was not from this area. This prompted an internal review at the North Lancashire PCT and a number of recommendations were made in light of this. A copy of the letter setting out these recommendations is attached at Appendix B.

The Task Group are grateful to North Lancashire PCT for their prompt response and the actions taken.

## **(10) Outstanding Issues**

The Task Group in its investigations, uncovered some issues that it feels require further consideration. Being a time limited Task Group, the Members did not wish to submit recommendations that had not been fully investigated in the time the Group had for its work.

Therefore the Task Group wish to identify two outstanding areas.

Firstly, the Task Group held a special open meeting to discuss the proposed Draft Regulation Order which would control cockling activity in the Bay, with an Officer from the North Wales and North Western Sea Fisheries Committee. An important issue that arose at this meeting was health and safety at work for those people who worked in the Bay.

With the cockle beds currently proposed to re-open in September 2007, it was felt that the Overview and Scrutiny Committee should continue to monitor cockling activity and any issues that might arise, as the Task Group would finish its work before the beds re-open.

Secondly, the Task Group feel that regular updates from the North Western and North Wales Sea Fisheries Committee on the Draft Regulation Order to control cockling activity should be requested before its introduction in September 2009.

### **Recommendation 4**

That the Overview and Scrutiny Committee be requested :

- (1) To continue to monitor cockling activity when the cockle beds re-open.
- (2) To request regular updates from the North Western and North Wales Sea Fisheries Committee on the Draft Regulation Order to control cockling activity before its introduction.

## **(11) Conclusion**

The whole world has a responsibility to take action on the impact plastic pollution is having on the environment. Whilst the Task Group has had limited time to assess the impact plastic pollution is having on Morecambe Bay, the evidence presented was alarming. The Task Group believe that through establishing and adopting the Declaration on Plastic Pollution, it could begin to raise awareness across the country of this problem. This should make the Government aware that a safe and non polluted marine environment is important in ensuring community safety and well being. Lancaster City Council is only one small voice in the country but from small acorns giant oaks grow – if Lancaster City Council can gain the support of other local authorities around the country we will be heard.





## BREVIA

## Lost at Sea: Where Is All the Plastic?

Richard C. Thompson,<sup>1\*</sup> Ylva Olsen,<sup>1</sup> Richard P. Mitchell,<sup>1</sup>  
 Anthony Davis,<sup>1</sup> Steven J. Rowland,<sup>1</sup> Anthony W. G. John,<sup>2</sup>  
 Daniel McGonigle,<sup>3</sup> Andrea E. Russell<sup>3</sup>

Millions of metric tons of plastic are produced annually. Countless large items of plastic debris are accumulating in marine habitats worldwide and may persist for centuries (1–4). Here we show that microscopic plastic fragments and fibers (Fig. 1A) are also widespread in the oceans and have accumulated in the pelagic zone and sedimentary habitats. The fragments appear to have resulted from degradation of larger items. Plastics of this size are ingested by marine organisms, but the environmental consequences of this contamination are still unknown.

Over the past 40 years, large items of plastic debris have frequently been recorded in habitats from the poles to the equator (1–4). Smaller fragments, probably also plastic, have been reported (5) but have received far less attention. Most plastics are resistant to biodegradation, but will break down gradually through mechanical action (6). Many “biodegradable” plastics are composites with materials such as starch that biodegrade, leaving behind numerous, nondegradable, plastic fragments (6). Some cleaning agents also contain abrasive plastic fragments (2). Hence, there is considerable potential for large-scale accumulation of microscopic plastic debris.

To quantify the abundance of microplastics, we collected sediment from beaches and from estuarine and subtidal sediments around Plymouth, UK (Fig. 1B). Less dense particles were separated by flotation. Those that differed in appearance to natural particulate material (Fig. 1A) were removed and identified with Fourier Transform infrared (FT-IR) spectroscopy (7). Some were of natural origin and others could not be identified, but about one third were synthetic polymers (Fig. 1C). These polymers were present in most samples (23 out of 30), but were significantly more abundant in subtidal sediment (Fig. 1D). Nine polymers were conclusively identified: acrylic, alkyl, poly (ethylene:propylene), polyamide (nylon), polyester, polyethylene, polymethylacrylate, polypropylene, and polyvinyl-alcohol. These have a wide range of uses, including clothing, packag-

ing, and rope, suggesting that the fragments resulted from the breakdown of larger items.

To assess the extent of contamination, a further 17 beaches were examined (Fig. 1B). Similar fibers were found, demonstrating that microscopic plastics are common in sedimentary habitats. To assess long-term trends in abundance, we examined plankton samples collected regularly since the 1960s along routes between Aberdeen and the Shetlands (315 km) and from Sule Skerry to Ice-

land (850 km) (7) (Fig. 1E). We found plastic archived among the plankton in samples back to the 1960s, but with a significant increase in abundance over time (Fig. 1E). We found similar types of polymer in the water column as in sediments, suggesting that polymer density was not a major factor influencing distribution.

It was only possible to quantify fragments that differed in appearance from sediment grains or plankton. Some fragments were granular, but most were fibrous, ~20 μm in diameter, and brightly colored. We believe that these probably represent only a small proportion of the microscopic plastic in the environment and methods are now needed to quantify the full spectrum of material present. The consequences of this contamination are yet to be established. Large plastic items can cause suffocation and entanglement and disrupt digestion in birds, fish, and mammals (3). To determine the potential for microscopic plastics to be ingested, we kept amphipods (detritivores), lugworms (deposit feeders), and barnacles (filter feeders) in aquaria with small quantities of microscopic plastics. All three species ingested plastics within a few days (7) (Fig. S1).

Our findings demonstrate the broad spatial extent and accumulation of this type of contamination. Given the rapid increase in plastic production (Fig. 1E), the longevity of plastic, and the disposable nature of plastic items (2, 3), this contamination is likely to increase. There is the potential for plastics to adsorb, release, and transport chemicals (3, 4). However, it remains to be shown whether toxic substances can pass from plastics to the food chain. More work is needed to establish whether there are any environmental consequences of this debris.

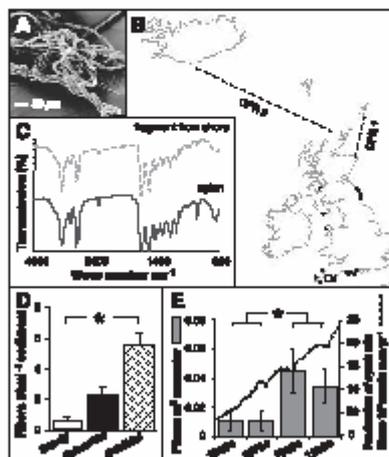


Fig. 1. (A) One of numerous fragments found among marine sediments and identified as plastic by FT-IR spectroscopy. (B) Sampling locations in the northeast Atlantic. Six sites near Plymouth (□) were used to compare the abundance of microplastic among habitats. Similar fragments (●) were found on other shores. Routes sampled by Continuous Plankton Recorder (CPR 1 and 2) were used to assess changes in microplastic abundance since 1960. (C) FT-IR spectra of a microscopic fragment matched that of nylon. (D) Microplastics were more abundant in subtidal habitats than on sandy beaches (\*,  $F_{2,23} = 13.26$ ,  $P < 0.05$ ), but abundance was consistent among sites within habitat types. (E) Microscopic plastic in CPR samples revealed a significant increase in abundance when samples from the 1960s and 1970s were compared to those from the 1980s and 1990s (\*,  $F_{3,2} = 14.42$ ,  $P < 0.05$ ). Approximate global production of synthetic fibers is overlain for comparison. Microplastics were also less abundant along oceanic route CPR 1 than along CPR 2 ( $F_{1,24} = 5.18$ ,  $P < 0.05$ ).

## References and Notes

1. P. G. Ryan, C. L. Moloney, *Nature* 361, 23 (1993).
2. M. R. Gregory, P. G. Ryan, in *Marine Debris*, J. M. Coe, D. B. Rogers, Eds. (Springer, Berlin, 1996), pp. 48–70.
3. J. G. B. Demak, *Mar. Pollut. Bull.* 44, 842 (2002).
4. E. J. Carpenter, S. J. Anderson, C. R. Harvey, H. P. Mills, B. P. Bradford, *Science* 178, 749 (1972).
5. J. E. Colton, F. D. Knapp, B. R. Burns, *Science* 185, 401 (1974).
6. P. P. Klemm, *Polym. Degrad. Stab.* 27, 183 (1990).
7. Materials and methods are available as supporting material online on Science Online.
8. We thank C. Hoare, R. Ticehurst, G. Mandair, and F. Birembaut for help with sample collection and analysis. Supported by the Leverhulme Trust, UK.

Supporting Online Material  
[www.sciencemag.org/cgi/content/full/304/5672/838/DC1](http://www.sciencemag.org/cgi/content/full/304/5672/838/DC1)

Materials and Methods

Fig. S1

References and Notes

10 December 2003; accepted 10 February 2004

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18 December 2008

Ms Jenny Kay  
Democratic Support Officer  
Lancaster City Council  
Town Hall  
Dalton Square  
Lancaster  
LA1 1PJ

Dear Ms Kay

**Re: Pollution in Morecambe Bay Task Group**

Thank you for your recent letter with regard to the above and bringing to my attention sharps disposal box recently washed up on the shores of Silverdale.

I have now had the opportunity to investigate this issue and can report the following.

As I am sure you will appreciate there is a difficulty with regard to identifying the origin of any specific sharps bin. However I am able to confirm that none of our clinical services in Lancaster and Morecambe use the black frontier sharpsafe 0.45 litre container as shown in the photograph.

**Management of Waste:**

The Trust does have in place a Waste Management policy which is currently under review to reflect the changes in the organisation as well as the changes in the Hazardous Waste Legislation, in particular the recently published NHS guidance HTM 07-01 Safe Management of Healthcare Waste.

Clinical Waste collection in the Lancaster area is currently undertaken by a contractor Cannon Hygiene who collects the waste from a number of designated storage areas.

Management responsible for waste disposal are due to undertake a clinical waste audit on the handling, transportation and disposal of the waste within the next month, part of the audit will include a comparison of consignment notes from the point of collection by the contractor against the consignment notes from the point of incineration by the contractor.

Following receipt of your letter and an internal review in light of the concerns you raised a number of recommendations have been made. Where services are no longer provided by North Lancashire PCT, these recommendations have been forwarded on to the appropriate organisation.

---

North Lancashire Health

As you will be aware, there has been a major re-configuration of the provision of Primary Care and Mental Health services in the Morecambe Bay area which was implemented on 1 October 2006.

These recommendations are:

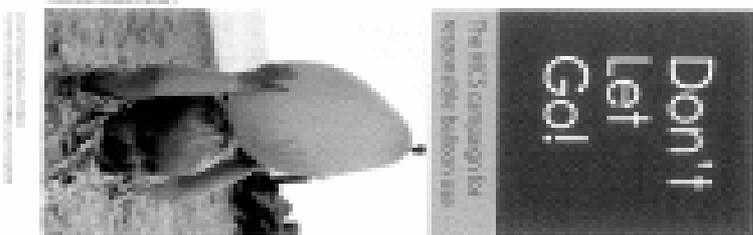
- All departments in the PCT who produce or manage clinical waste must continue to monitor and review the management of clinical waste.
- All undesired circumstances, near misses and incidents must be reported the health and safety department on the official reporting forms as soon as possible.
- Community Drug Teams (now managed by Lancashire Care Trust) must continue to exercise the good practice of monitoring the route of sharps containers from distribution until the container is placed in an appropriate waste stream.
- Once implemented continue the regular recorded auditing of the contractor to ensure the waste is being handled, transported, disposed of in the approved manner.

I hope that you are satisfied with the investigation we have undertaken and the actions taken. Please do not hesitate to contact me if you require any further information.

Yours sincerely



**IAN R CUMMING**  
**CHIEF EXECUTIVE**

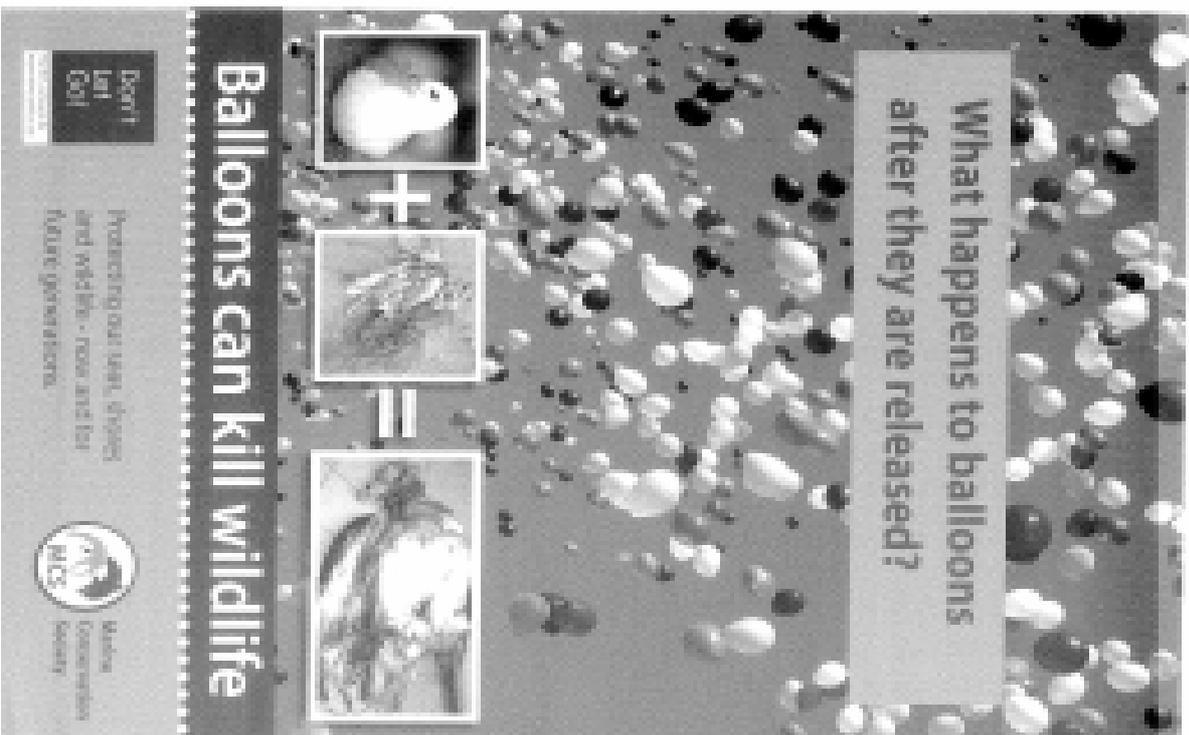


If you would like to find out more about the negative effects of balloon releases on the natural environment, please visit

[www.mcsuk.org](http://www.mcsuk.org)

You can also contact us at:  
 Via the Conservation Society  
 Unit 3, West Business Park  
 Alton Road  
 Broomfield  
 Harrogate  
 HG5 9TH  
 Tel: 01977 800077  
 Fax: 01977 502205  
 E-mail: [info@csuk.org](mailto:info@csuk.org)  
 The BC's Don't Let Go campaign will be held under the Organisations of the Environment and the Green Party

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## Balloons float up into the air and disappear from your thoughts, but not from the environment.

Beach litter surveys organised by the Marine Conservation Society have shown that the number of balloons and balloon pieces found on UK beaches has tripled in the last 10 years.

- 10% of released balloons don't burst, they float back down to earth where they pose a serious threat to wildlife.
- Dolphins, whales, turtles, seabirds and other animals have all been killed by balloons.
- If swallowed, balloons can block an animal's gut and cause it to starve.
- Animals can become entangled in balloon ribbons and strings restricting their movement and their ability to feed.
- Even biodegradable latex balloons are a danger as they can take several months or even years to break down.



Turtles are particularly at risk as they can confuse balloons with their jellyfish prey.

Most balloon releases have already been banned by several local authorities in the UK, USA and Australia.

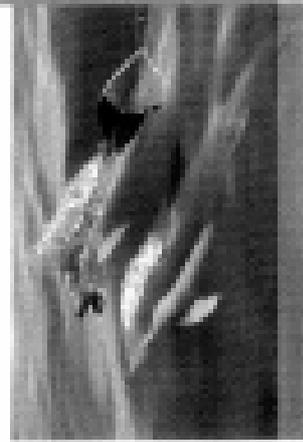


## BALLOONS CAN KILL WILDLIFE

## MCS guidelines for wildlife friendly balloon use

- You can enjoy balloons without harming wildlife.
- Don't let go of balloons outdoors
- Fill balloons with air rather than helium.
- Use balloons made of natural rubber latex rather than mylar (foil) balloons.
- When tying balloons use natural cotton string rather than plastic ribbons.
- Securely tie any balloons that are used outside.
- Always hand tie balloons rather than using plastic valves.
- Sign up to the 'Don't Let Go' petition

[www.mcsuk.org](http://www.mcsuk.org)



Instead of releasing balloons into the environment, why not try a wildlife friendly alternative?

- **Use balloons responsibly**  
As fill your balloons, and tie a long piece of string inside. Release the balloons outdoors and have everyone pop them to find grass.
- **Use natural latex** - Each member of a team has to run a short race and if on a balloon to pop it before running back to tag the next member of the team. The first team to pop all their balloons wins!
- **Use a string** - Has a balloon string for a long, long moment, try a glass stringed balloon sculpture.
- **With our website for more ideas.**

