

## Beach Litter

This pack focuses on the type of litter that might wash up on a local beach and how it gets there. It uses Wembury, in Devon, as a case study and will raise awareness of who creates that litter.

### Where did that rubbish come from?

These four items were washed up on Wembury Beach. No one knows how they came to be there, or where they came from, or how long they took to get there. So your students can invent a story to account for them being there.

The story of how these particular pieces of litter came to be on the beach could be told as a simple narrative (recount), or in verse, song, pictures or drama.



Rope

This is quite a thick bit of rope; it probably came from a ship.

What might it have been used for?

What sort of ship might have used it?

How might a short piece have ended up in the water?

Some of the strands have been distorted; perhaps the rope broke when it was used for towing a ship, or as a berthing line, or maybe it caught round a propellor.

Has it been in the water long?



Balloon

Are there any clues to what country might this have come from?  
Would a helium filled balloon be moved more by the winds or currents?  
Where does the wind at Wembury mostly blow from?  
Which country lies up-wind?





Oil Drum

What sort of engine uses this sort of oil?  
What sort of machine uses that sort of engine?  
Would it be ashore or afloat?





Radar Aerial

What sort of ships use this sort of aerial?

How could the aerial end up in the water – was it blown off the mast, did the ship sink, did it get dropped over the side when the crew was changing it?

What clues are there to how long it has been in the water?

Would it have been affected more by the wind or the currents?

What clues are there to where it has been?

## **Background material**

These examples of beach litter are not selected because they are typical or representative, but because they seem likely to inspire a good story. They were seen on the beach between Wembury and Wembury Point (SH SX 517 484 and 502 482) in Devon, near Plymouth, UK.



### **The role of shipping**

Some litter comes from ships or boats. These can be large cargo or passenger carrying ships, fishing vessels or small pleasure boats. For more on shipping, what sort of ships there are, what they carry, where from and to, and what life is like onboard, the following websites may be useful:

- Inspiring Seas, where you can download a game, “That Ship Does What Again?” – <http://www.inspiringseas.co.uk/>
- The Container Shipping Information Service - <http://www.shipsandboxes.com/eng/>
- Seafish produces a CD about careers in fishing - <http://www.seafish.org/land/training.asp?p=fe510>
- Webships - <http://www.ms-sc.org/Corporate-Information/Webships>
- The BBC Box - [http://news.bbc.co.uk/1/hi/in\\_depth/business/2008/the\\_box/default.stm](http://news.bbc.co.uk/1/hi/in_depth/business/2008/the_box/default.stm)
- UK Chamber of Shipping – Ship Types - [http://www.british-shipping.org/British%20Shipping/ship\\_types/](http://www.british-shipping.org/British%20Shipping/ship_types/)
- Follow the Fleet - <http://www.webucation.ie/imdo/>
- Recreational Boating – See the report prepared by the British Marine Federation and others, “Watersports and Leisure Participation Survey 2008” at [http://www.britishmarine.co.uk/upload\\_pub/FINALparticipationpublicreport2008.pdf](http://www.britishmarine.co.uk/upload_pub/FINALparticipationpublicreport2008.pdf).



## **International Rules**

There are international rules intended to prevent ships from polluting the sea either deliberately or by accident. The main instrument is the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto, known by all as MARPOL, see [http://www.imo.org/TCD/contents.asp?doc\\_id=678&topic\\_id=258](http://www.imo.org/TCD/contents.asp?doc_id=678&topic_id=258).

## **Oil spills**

Facts and figures on oil spills from tankers are available from Intertanko, the voice of independent tanker owners, aiming to provide leadership to the tanker industry in serving the world with the safe, environmentally sound and efficient seaborne transportation of oil, gas and chemical products. Their website is at <http://www.intertanko.com/>. Their 2008 report covers spills and incidents at <http://viewer.zmags.co.uk/publication/d58bd0bd#/d58bd0bd/22>. The International Tanker Owners Pollution Federation (ITOPF) has more statistics, maps and information on oil pollution at <http://www.itopf.com/>.

## **Collisions and groundings etc**

For information on maritime casualties see the Marine Accident Investigation Branch website, <http://www.maib.gov.uk/home/index.cfm>. Their reports include details of sinkings, collisions, groundings, and loss of cargo and personnel overboard.

## **Litter from the land**

Most litter does not come from the sea, but from the land. It can be washed into rivers from town or country by the rain or blown in by the wind. People leave it on the beach. Some of it is flushed down the toilet and gets through the system into the sea. Some countries are better at stopping litter than others.

## **How litter travels the sea**

Whether it gets into the sea from ships or from the land it can travel a long way, carried by ocean currents and tidal streams and blown by the wind.

- Tides – The Proudman Oceanographic Laboratory has information about tides at <http://www.pol.ac.uk/home/insight/tidefaq.html>. See also the UK Hydrographic Office website, <http://easytide.ukho.gov.uk/EASYTIDE/EasyTide/Support/faq.aspx>, which also mentions tidal streams.
- Ocean currents – A map of Ocean Currents is at [http://uk.encarta.msn.com/media\\_461531063/ocean\\_currents.html](http://uk.encarta.msn.com/media_461531063/ocean_currents.html).
- Weather – More information than you could ever want is on the BBC Weatherwise site - <http://news.bbc.co.uk/weather/hi/weatherwise>.

## **The effects of litter**

On its way floating litter can pick up marine organisms like weeds and barnacles which grow on it.

The pictures do not show what most beach litter is like. Most of it is plastic and small. Not only is it nasty to look at and maybe dangerous to us on the beach, it can be much worse for wildlife. Birds, fish, whales, dolphins and turtles can get tangled in it, or eat it by mistake – either way they die. Very small pieces of plastic can adsorb pollutants and become toxic themselves. If filter feeders take them in they may be harmed, and those that eat them may be harmed. That might include us. There is a summary of marine and coast litter and its effects on the Marine Life Identification Network (MarLIN) website at [http://www.marlin.ac.uk/PDF/MLTN\\_Coastal\\_litter.pdf](http://www.marlin.ac.uk/PDF/MLTN_Coastal_litter.pdf).

The UN Atlas of the Oceans contains information on marine litter and ocean dynamics. Its website is <http://www.oceansatlas.org/>. A similar site is the World Oceans Observatory, <http://www.thew2o.net/>.

The riverOcean Foundation is a charity dedicated to increasing awareness and encouraging care for our water environments. There is a section on marine litter on their website at <http://www.riverocean.org.uk/ocean/exhibition/digibooth/flotsom.htm>.

The Marine Conservation Society has been collecting and surveying beach litter for over 10 years and you can see their reports at <http://www.adoptabeach.org.uk/>. See also their site for teachers, <http://www.mcsuk.org/education/cool+seas+resources>.

Dorset Coast Forum held a Marine Litter Summit 2009 which brought together a wide variety of actors from the maritime industries, local authorities, central government, Non-Governmental Organisations (NGOs) and interest groups to explore and propose solutions that will decrease the amount and the impact of litter discarded and washed up on the UK coastline. You can find the proceedings of the conference at <http://www.dorsetforyou.com/marinelittersummit09>.

### **Additional Resources**

To initiate the project with the class you might like to use our PowerPoint presentation.

There is also a selection of images, including those in this document and the presentation.

## Other Activities

- Rock pool rambles
- Beach cleaning recording the types and abundance of litter collected
- Marine life surveys using transects and quadrats
- Leaflets
- Posters
- Presentations
- Spreadsheets based on research done
- Artistic projects (the pictures used in the Powerpoint presentation are available)
- Oral histories



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