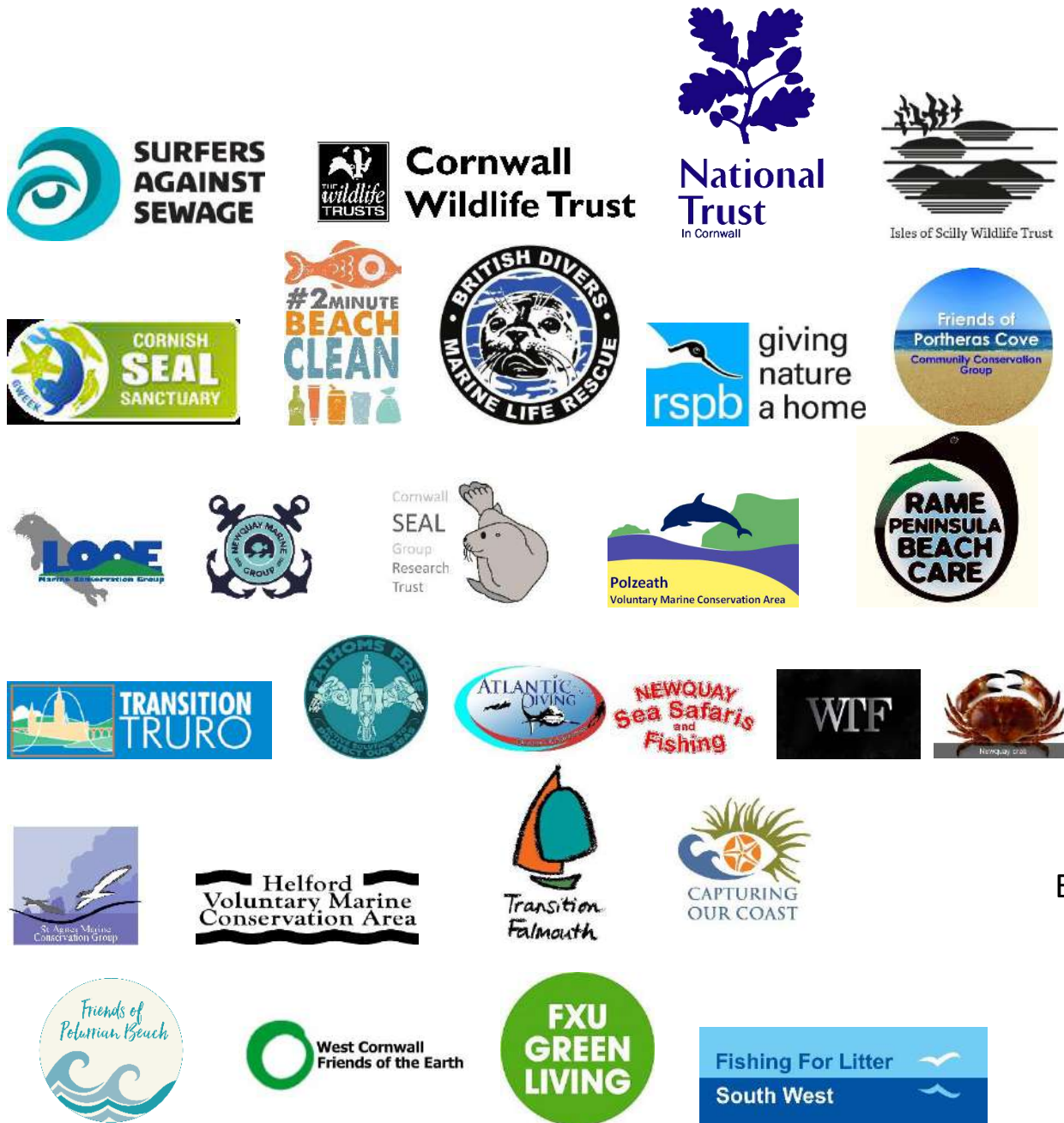


# Cornish Plastic Pollution Coalition

The logo is a black circle with a white cross inside, positioned to the right of the word 'Pollution'.

The power of the network



Cornwall Wildlife Trust    **Isles of Scilly Wildlife Trust**  
**Surfers Against Sewage**    National Trust (in Cornwall)  
**RSPB SouthWest**    Clean Cornwall    **Friends of Fowey Estuary**  
 Friends of Portherras Cove    **Widemouth Task Force**  
 Helford VMCA    **Newquay Marine Group**  
 Rame Peninsula Beach Care    **Looe VMCA**  
 Cornwall Seal Group Research Trust  
**Cornish Seal Sanctuary**    Polzeath BeachCare    **Fishing for Litter SW**  
 Transition Falmouth    **St Agnes VMCA**    West Cornwall FoE  
 Transition Truro    **Truro Cathedral**    Refresh Porthleven  
**Newquay Crab**    Newquay Sea Safaris and Fishing  
 2 Minute Beach Clean    **Atlantic Diving**  
**Prof. Richard Thompson (Plymouth Uni Marine Sciences Dept)**  
 Prof. Brendan J. Godley, Chair in Conservation Science, Exeter  
 University (Penryn)  
**Fathoms Free**    Crackington Crew    **The Final Straw**  
 Capturing our Coast    **Friends of Polurrian Beach**  
 Exeter and Falmouth Student's Union    **Truro Green Street Volunteers**  
**British Divers Marine Life Rescue**    Friends of Poldhu  
 Falmouth Marine Conservation Gp    **Sustainable St Agnes**  
**Love Porthreath**    Lizard Peninsula FoE  
 Mounts Bay Marine Group    **The Plastic Movement**

# Terms of Reference

- to raise awareness of the issue of marine litter and plastic pollution around our coastline by working with community groups, interested schools, and other organisations who wish to engage with the CPPC;
- to informally improve information exchange and coordination between organisations and volunteers involved in marine litter and plastic pollution in Cornwall;
- to specifically highlight the issue of balloon debris in Cornwall;
- to raise the issue of marine litter and plastic pollution with identified businesses and organisations and try to persuade them to change their practices to more environmentally friendly methods / products.



# Strength in the Collaborative Voice

Successes to date:

Pirate FM	Whitbread PLC
Mount's Bay	Limerick FM
Rotary Club	Domino's Pizza
Age Concern	Aspects
Exeter	Holidays
NHS Organ	Harry Ramsdens
Donation	Fishermen's
CEX	Mission





# The 100% Biodegradable fallacy....



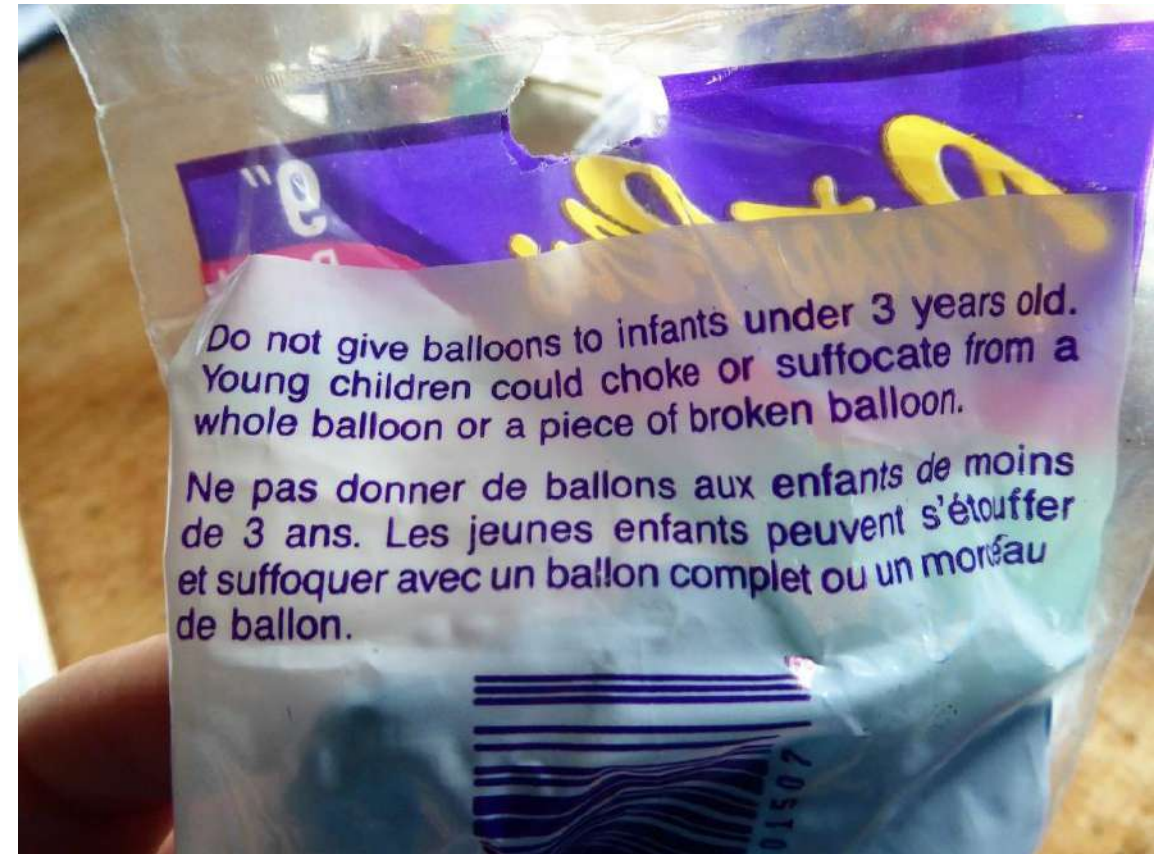
Balloon industry claim latex balloons are 100% biodegradable and degrade in 6 months .....  
*'Like an oak leaf'*

We would challenge this claim.

# Latex Biodegradability

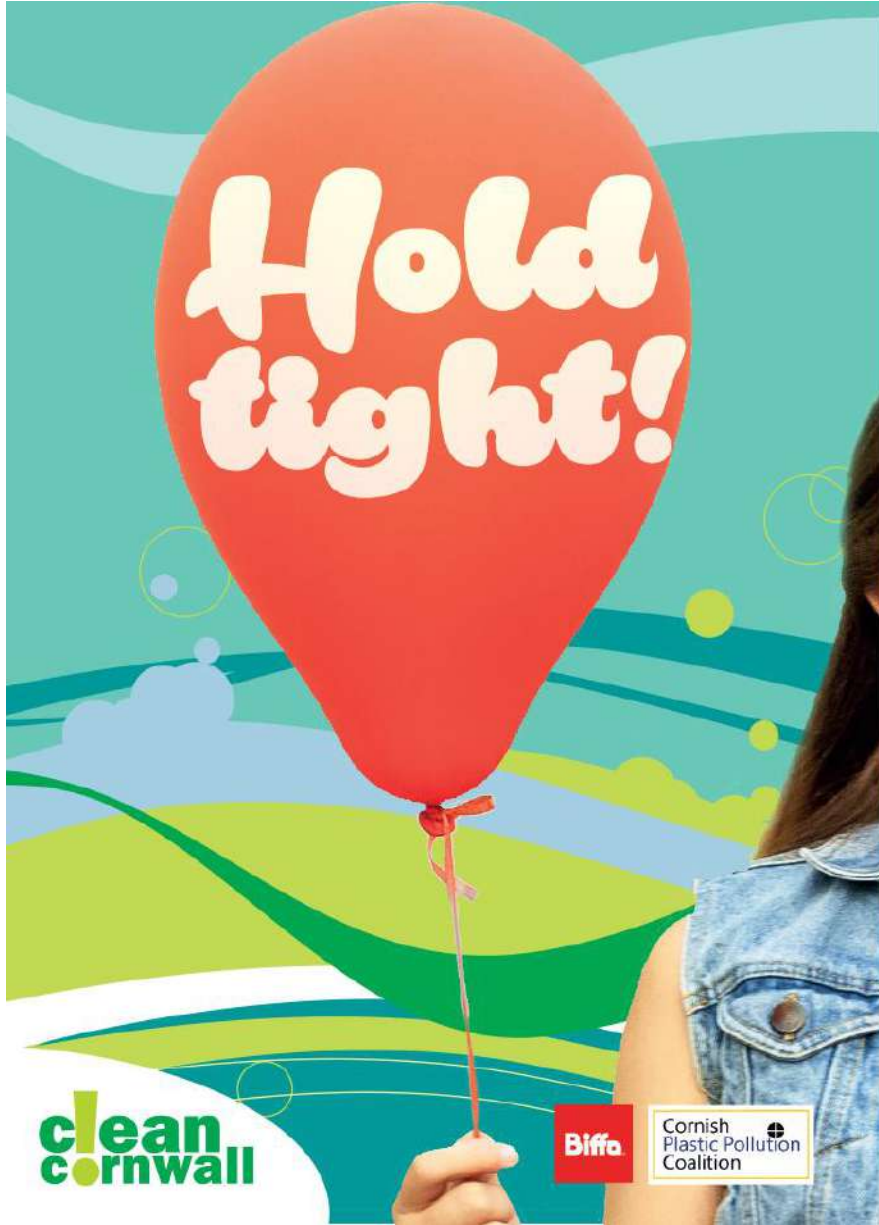
- 28 year old research study by Burchette in 1989 only conducted trials for a period of six weeks, the rest was supposition.
- Rate of breakdown is reduced in marine environment (low temp, low oxygen, high salinity).
- Rate of breakdown is further reduced by chemical or biological fouling (Andrady, 2000), and encrustation with marine life (e.g. barnacles & seaweeds).
- A Dutch report, (Boukris et al 2016) looked at how long latex balloons may last in a range of environments, with and without oxygen. Results showed that under natural conditions, with oxygen available, complete biodegradation in freshwater and sea water takes approximately two, and two to five years, respectively.

February 2018 – CPPC contacted by Mr George Oustayiannis Chair of NABAS  
(National Association of Balloon Artists and Suppliers)



# Education Work





**Activity 4**  
*Spread the word* SUITABLE FOR KS1 OR KS2

**Create a display about the issue of marine litter**  
As a school or group make a pledge to avoid releasing balloons and find an alternative that is more friendly to the environment.

- Think about ways your school/group can reduce the amount of disposable plastic, you use and find ways to recycle what you do have.
- At secondary school, think about a carbon footprint calculator. Biffa is a Biffa school.

**Activity 3**  
*Separating plastics by density* SUITABLE FOR KS1

**AREAS OF CURRICULUM**  
**SCIENCE**

- Using scientific skills for a practical investigation, using results to draw simple conclusions, and using this evidence to answer questions.
- The pupil can group and identify materials in different ways, according to their resources.

**THE EXPERIMENT**

- Set up 4 containers with 1 litre of drinking water.
- In the 1st container dissolve 1 gram of salt - this is the same salinity as seawater and oceans.
- In the 2nd container dissolve 10 grams of salt - this is the same salinity as the sea.
- In the 3rd container dissolve 20 grams of salt - this is the same salinity as the sea.

**Activity 2**  
*Litter in the marine environment* SUITABLE FOR KS1 OR KS2

**AREAS OF THE CURRICULUM**  
**SCIENCE**

- Year 2: Impact on different habitats
- Year 4: The human impact on the environment

**CITIZENSHIP**

- Taking responsibility for themselves

**JELLYFISH IN A BOTTLE**  
In this activity students learn how litter, like plastic bags, can be mistaken for food by marine animals.

Litter is not a natural thing found in the environment. Animals that live in the ocean mistake litter such as plastic bags or food, so what looks like food can end up in the stomach.

**Activity 1**  
*Float on Plastic* SUITABLE FOR KS1 OR KS2

**AREAS OF THE CURRICULUM**  
**SCIENCE**

- Year 2: Impact on different habitats
- Year 4: The human impact on the environment

**CITIZENSHIP**

- Taking responsibility for themselves and their environment
- Take part in a simple debate about topical issues
- What happens and how the local, national and global environments and about some of the ways people look after them

**WHAT YOU NEED**

- Means for the students to watch the YouTube video: <https://www.youtube.com/watch?v=1949999999>
- Visual prompts to promote points of discussion

**IDEAS**

- Stopping litter getting into the sea, and cleaning up what is there <https://www.biffa.co.uk/press/1949999999>

**Current possibilities**

Boyan Sat <https://www.thecoalition.com/boyan-sat>

**Instructions**  
Using the video as an introduction, discuss different ideas and views in your class or group.

- How does the video make you feel?
- What type of plastic rubbish floats into the air?
- Do you think balloons are litter?
- Do you think differently about balloons from litter that is dropped on the ground?
- Do we think about litter as differently from litter on land?
- How does litter travel on land and sea?
- Write a short story or poem about the journey of a piece of litter. Where does it start? How did it become litter? Where will it go and where will it end up...?
- What do you think could be a way of cleaning up our seas?

This month, in partnership with



The CPPC has launched a FREE education resource pack with everything groups of 5-11 year olds need to learn about and take action against balloon litter, and competition to design graphics for a BIFFA lorry.



[www.cleancornwall.org/holdtight](http://www.cleancornwall.org/holdtight)

# Plastiglomerates

*“A marker horizon for human pollution”*

*Patricia Corcoran, Charles Moore, Kelly Jazvac, Geological Society of America June 2014*



- First identified by Dr Patricia Corcoran ( University of Western Ontario, Canada) in 2014
- Initial studies were based on specimens from Kamilo Beach, Hawaii
- Formed from incinerated plastic mixing with sediments and other organic materials
- Agglutination of other materials into the molten plastic affects overall density – and buoyancy.

# Cornwall

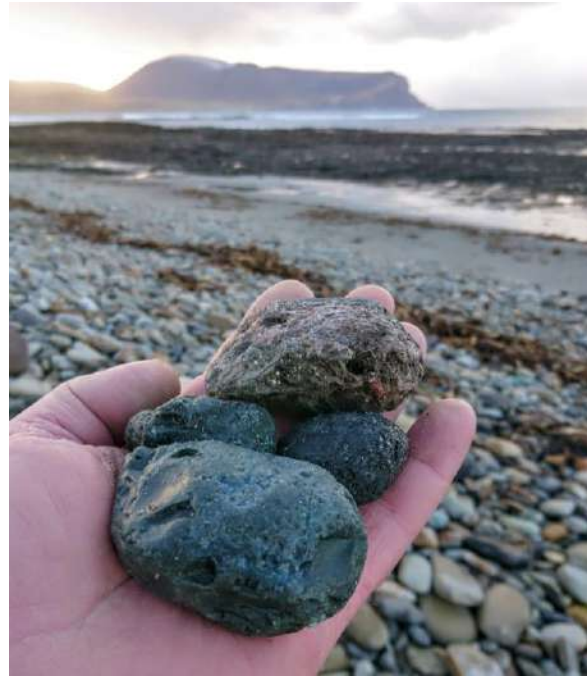
Marazion (South Coast)

Whitsand Bay (South Coast)

Perranporth (North Coast)

Port Gaverne (North coast)

Widemouth Bay (North Coast)



## UK and Beyond....

Orkney

Guernsey

Pembrokeshire

South Wales

Dorset

Instow Beach, Devon

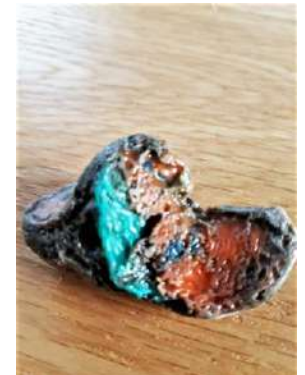
Vancouver Island, Canada

SW Ireland

Azores

Spain/Portugal

Kauia, Hawaii





SWW uses biobeads at 9 out of 650 plants (but serving one-eighth of regional population). Used at 46 other plants in the UK. The scale is enormous.



# Ongoing losses

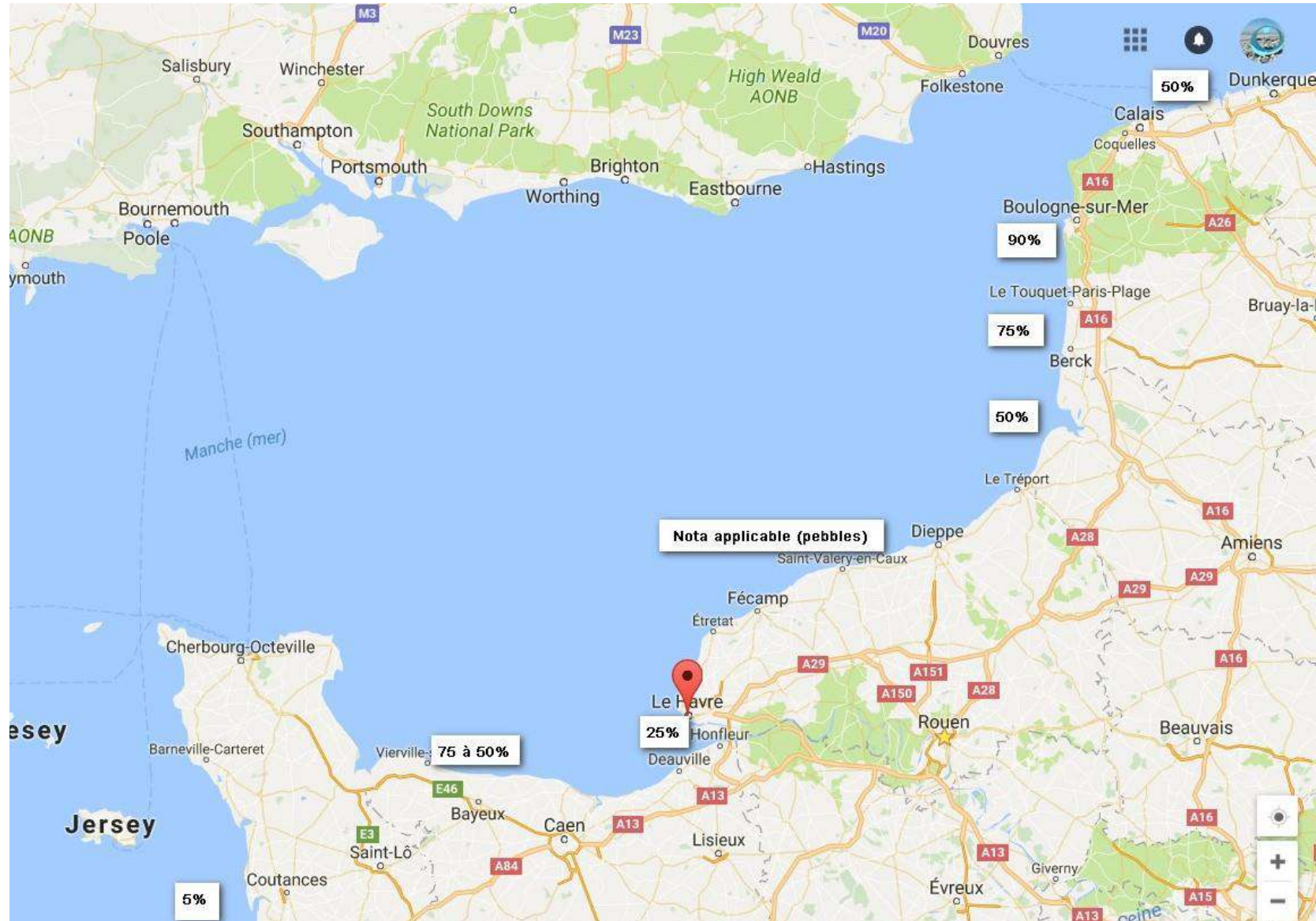


# Bad housekeeping



# Catastrophic spills

Modbury 2009 / Truro 2010....





Thanks to Rob Arnold and his microplastics separation machine...

... we have removed about 10 million pellets and hundreds of thousands of pieces of other microplastics in just 5 sessions in one year on Tregantle beach!

Over 50% of the pellets have consistently been biobeads

A similar picture in many other parts of Cornwall





# Biobead pollution on our beaches.

## What we know so far...



*SWW: 'All spills have been cleaned up, no biobeads are being lost to the environment'*

*'No evidence that these aren't just regular recycled plastic pellets'*

**A Cornish Plastic Pollution Coalition report  
September 2017**

- Plastics industry expert identification
- International Pellet Watch - comparative analysis of biobeads and nurdles taken from same 1m<sup>2</sup> area of Tregantle beach
- PCB concentrations similar between pellets (69 ng/g) and biobeads (42 ng/g) (light to moderate pollution).
- Much higher concentration of 16 polycyclic aromatic hydrocarbons (PAHs) - 3 to 4 times higher in biobeads (929 ng/g) than pellets (283 ng/g).
- PAHs are derived from petroleum and petroleum products - exposure to street runoff water in sewage treatment plants.
- Conclusion - (1) biobeads were lost from wastewater treatment plants (not from container ship spills) and (2) are not regular recycled plastic pellets, as SWW has previously suggested

# Collaboration locally and further afield...

Ongoing communication and information exchange with Fidra (Great Nurdle Hunt) and UK Pellet Loss Coalition

Presentation in Brussels to European Commission workshop developing EU strategy on microplastics

Contribution of a chapter to the Surfrider Foundation report on biomedica pollution across Europe - soon available in English



**SUPPORTS DE PROLIFÉRATION  
BACTÉRIOLOGIQUE ET POLLUTION  
DES MILIEUX AQUATIQUES  
2018**

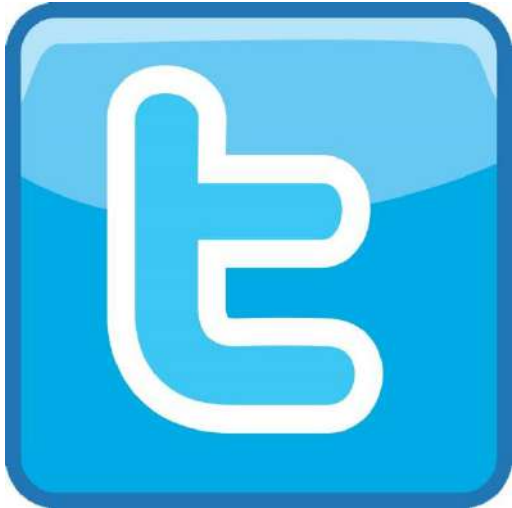
# Results so far....

- Thanks to the CPPC member organisations who got out on beaches and riverbanks to provide samples and put their names to the report
- SWW actions - working group, improved storage, some test filters installed, technical standard for staff and contractors, possible external auditing.
- EA are investigating this significant contributor to microplastic pollution
- BUT... we want to see a mechanism to trap lost beads - this is the final stage before effluent is discharged to the environment
- Still much we don't know - alternative sources? Please send sightings!

# Social Media



Cornish Plastic Pollution Coalition  
URL @Yourshoreplastic



@Cornish\_PPC

# Co-ordinator Contacts

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