



Blue Economy – Sustainable Solutions* Monthly Newsletter

Volume 1 | Issue 6 | June, 2020

WELCOME!

Earth Ambassadeurs welcome you to its official monthly newsletter – BESS! In here, you will find information that informs and educate, as it discusses current global issues surrounding marine litter.

We invite you to read and share the information. You can also find additional material on our website @ earthambassadeurs.org.

NEWS!

Earth Ambassadeurs gain GPML Membership.

The Earth Ambassadeurs organisation is now a member of the Global Partnership on Marine Litter, a division of the United Nations Environment Programme (UNEP).

GPML is a multi-stakeholder partnership organisation that brings together all those working to prevent marine litter and microplastics. They provide a unique global platform for groups to share their knowledge and experience and establish problem-solving partnerships designed to this urgent global issue.

<https://www.gpmarinelitter.org/>

The Story of Plastic

Plastic is everywhere and have become lighter, stronger and more durable as it has evolved. It is a big part of our lives. In fact, many of us first meet plastic on the day we're born in the form of our plastic identity bracelet on our ankle. From then, we've grown up in a world that is full of plastic and worryingly, it's increasing every day. You see, every piece of plastic that has ever been made is still out there somewhere. Some of it gradually breaks up when it's thrown away, getting smaller and smaller, but never quite going away. Some plastics are thought to be able to break down in the environment after about 500 years, but many will last **FOREVER!**

The History of Plastic

Alexander Parks, an English inventor created the first plastic-like substance, Parkesine, in 1850. He wasn't able to find any takers for the industrialised manufacture of products made from Parkesine. In 1869, American inventor John W. Hyatt developed celluloid, which was initially used to make billiard balls, until its highly flammable nature was discovered. As a result of its habit of bursting into flame, it ended up being used mostly in the film industry. Despite further attempts by a few other inventors, it wasn't until the early 1900s that plastic production really took off. In 1907, a Belgian-born American inventor called Leo Baekeland created 'Bakelite'. It was light, durable, easy to mold and kept its shape when hot. He patented it in 1909 and very soon his revolutionary new material was being used to make a huge number of different items, including telephones, toys, building materials and car and aeroplane parts.



Research, Education, Citizen Science & Change

By 1944, Bakelite had been used to create over 15,000 different articles. Meanwhile in 1908, Jacques E Brandenburger created cellophane, a light, clear plastic that could be used to package products in a way that kept them protected from contact with water and dirt until they were unwrapped. Other forms of plastic soon followed, like polyvinyl chloride (PVC) in 1920, still the most commonly-used type of plastic today, nylon in 1939 and acrylonitrile butadiene styrene (ABS) in 1948.

The Problem of Plastic

It takes a VERY long time to biodegrade (to be broken down in the environment by bacteria and other living organisms) and some types of plastic will never biodegrade, because bacteria simply won't touch it. That means that as the years go by, our planet's surface is getting covered with more and more plastic that we have thrown away, but will never disappear. Some plastics photodegrade instead, meaning that prolonged exposure to light will break them down. But they only break down into smaller and smaller bits of plastic. They never actually disappear.



Newsletter prepared in partnership with the Caribbean Maritime University Environmental & Sustainability Club

Synthetic Fibres in the Water

Every time a synthetic garment is washed, microfibrils - tiny strands of plastics like nylon and acrylic - are washed out of the garment and into the waste water. Ultimately, the wastewater and its microfibrils end up in the oceans. Up to 1,900 microfibrils can be released by a single garment. Think how many clothes you have that are made out of synthetic fibres. Now think about how many people there are in the world and how many garments they own that are made of synthetic materials. Multiply that number by 1,900 and see how big a problem this is! We know the problem exists, we still don't know potentially how big of a problem the tiny plastic fibres are having on the environment. But we know the microfibrils are there and research has already shown that they are becoming lodged in the intestines of fish. These microfibrils are ending up in the intestines of the birds that eat the fish. The microfibrils are too small to be filtered by water treatment plants, so they could well be in drinking water too.

The bigger problem of Plastic

In the 1950s, 2 million tonnes of plastic was produced per year. By 2015, annual production had increased nearly 200-fold, reaching 381 million tonnes. Between 1950 to 2015, cumulative production reached 7.8 billion tonnes - approximately one tonne for every person alive today.

Much of the plastic we throw away ends up in landfill sites - huge holes in the ground that we fill up with rubbish, then cover over with soil. Increasing amounts of plastic are being recycled now as recycling methods improve and people's awareness of the problem is growing. But even with increased recycling, only about 9% of the world's plastic is recycled. Watch the video at: <https://www.nationalgeographic.com/news/2017/07/plastic-produced-recycling-waste-ocean-trash-debris-environment/>.

Follow the discussion on plastic at earthambassadeurs.org/blog

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