

eXXpedition comes to Trinidad

18th - 21st February 2016

Today we highlight a group of female environmentalists traversing across the planet's waters on a quest for answers.



Ms. Emily Penn (Left) and Dr. Lucy Gilliam (Right), Founders of eXXpedition

eXXpedition is a series of all women voyages to make the unseen seen, from the toxics in our bodies to the toxics in our seas. On the 16th of November 2014 eXXpedition launched the first mission with a crew of 14 women setting sail across the Atlantic Ocean in search of answers relating to the health of our environment and to the health of our bodies. During an eXXpedition voyage environmental samples are collected to assess plastic and pollutants, feeding in these samples to wider studies investigating the impacts of toxics and plastics pollutants and linking this sampling to narratives of ecosystem health, personal health and the products we consume.

The eXXpedition crew also participate in biomonitoring with the UN founded initiative 'Safe Planet' to assess personal exposure to known toxic substances. Through personal exploration of our internal environment (*MeSearch*) the aim is to better understand the levels of toxic exposure in women.

WHY IS EXXPEDITION SAMPLING FOR PLASTICS?

Litter and pollution are the material manifestation of unconscious behaviours. Tonnes of plastic and chemical pollution are washing through our streams and rivers, ending up eventually in huge gyres of plastic debris circulating in the world's oceans. At present, the ocean's litter and plastic problem is increasing at the same rate as population growth. Policymakers, politicians

and the public remain largely unaware of the extent of the plastics problem and the magnitude of the threat to marine ecosystems. Most plastics do not biodegrade on land or in water, instead becoming brittle in sunlight and breaking apart into ever-smaller bits of plastic, still containing toxic substances introduced during manufacture.

These plastics act like sponges for other toxics, leading to the bioaccumulation of toxics in the food chain. Many of these chemicals are linked to disease and are found contaminating our bodies through food and consumer products. Plastic debris also threatens marine and terrestrial wildlife through entanglement or by clogging their digestive tracts. The images below are the insides of albatross chicks on Midway Island, one of the remotest islands in the world; 2000 miles from the nearest continent, but with a very real and life threatening plastic problem.

RESEARCH: EXPLORING TOXICS IN OUR OCEANS, SEAS AND LAKES

The eXXpedition team's research involves sampling the ocean, seas and lakes for plastics and surface feeding fish using manta trawl nets. The samples are quantified for types and sizes of plastics according to 5gyres protocols and recorded using a 'Citizen Science tool' called Marine Debris Tracker App.

Any fish that are caught are dissected to quantify plastics in the guts and samples are preserved for toxic analysis. Collected Microplastics will be sent for assessment for POPs, PCBs and other toxic contaminants and the fish will be assessed for plastic fragments in their guts and presence of toxic residues. We are also taking part in wider research projects including:

- Marine Litter Watch with the European Environment Agency
- Marine Debris Tracker with University of Georgia
- Toxics analysis of water samples by Dr Anna Kärrman, Örebro University
- Secchi Disk Project with University of Plymouth ([LINK](#))
- Marine Microplastics Project with Adventure & Science for Conservation (ASC) and the Marine Environmental Research Institute (MERI)

MESEARCH: EXPLORING TOXICS IN OUR BODIES

Scientists estimate that everyone alive today carries at least 700 contaminants within our bodies, most of which have not been well studied. Wherever you live in the world, you have been exposed to a cocktail of chemicals. Along with tests to identify pollutants in the seawater, all women on an eXXpedition voyage have their blood serum sampled for contamination, known as body burden analysis to assess personal exposure to known toxic substances. This

analysis has been conducted on our behalf by Dr Anna Kärrman, and the results are submitted to a global dataset collected as part of the UN Safe Planet campaign.

Through our personal exploration of our internal environment we hope to better understand the level of toxic exposure in women. We hope to understand this invisible pollution by creating a conversation that sheds light on the science of ecotoxicology and inspires positive actions to tackle the root causes.

An important part of the content creation is the interaction, debate and discussion of the issues by the teams aboard a voyage, which is curated to include filmmakers, scientists, environmental health professionals, and activists. Our teams also include women who have had cancer or have family members suffering from cancer. The interactions are documented through artistic creative practice led by our in residence artists, blogging from all the team and the creation of documentary film and interactive digital storytelling.

PARTNERSHIP WITH THE EMA

On Friday 19th February 2016 the team met with the Environmental Management Authority (EMA) for a discussion on “Challenges in overcoming issues with plastics and toxics in our world’s oceans”. The meeting featured discussions and research on marine pollution and waste management initiatives from the Institute of Marine Affairs, the EMA, the Local Country Coordinator for the International Coastal Cleanup (ICC), and the eXXpedition team. In attendance were representatives from the academic community, environmental civil society groups and other environmental stakeholders.

THE FOUNDERS

eXXpedition is the brain child of Dr. Lucy Gilliam and Emily Penn. Emily Penn is an oceans advocate, skipper and artist; a graduate of Cambridge University with a degree in Architecture. Emily is the youngest and only female recipient of Yachtmaster of the Year, awarded by HRH Princess Royal. She splits her time between leading expeditions and running Pangaea Explorations, the organisation she established to enable scientists, filmmakers and everyday people gain access to the most remote parts of our planet; collecting data on global issues and along the way have discovered previously unknown oceanic gyres – huge areas of plastic pollution accumulation.

Dr. Gilliam is an Environmental Scientist with a BSc (1st), in Biological Sciences and a Phd in Microbial Ecology & Soil Science. Lucy worked as a post-doctoral research scientist at Rothamsted Research before joining the UK Civil Service to work as science advisor for Defra. Her portfolio of work consisted of advising on ecotoxicology including endocrine disruptors, nanotechnology, heavy metals, climate change, biodiversity and sustainable food production.

SOURCE (www.expedition.com)

