

# What a load of rubbish

An exploration of **Jessica Lloyd-Mostyn's** family efforts to start thinking green to save money, time and precious resources.

CLOCKWISE FROM MAIN:  
Witnessing the marvellous,  
being at anchor; The  
problem is everywhere,  
even island paradises like  
Fiji now have beach rubbish;  
Reusable bags eliminate  
the single-use ones at the  
supermarket checkout.

IMAGE FROM FUJI SHORES AND MARINAS



When I suggested, nonchalantly and carefree, that we buy a boat and sail round the world, I had no real concept of the resulting adventure that we would embark upon.

Not being from a sailing background any notion that I had of a life on the water tended towards the romantic. Likewise our families and friends, back home in the UK, consistently imagine us sipping cocktails in the cockpit, sails billowing gently as we drift into the sunset.

The reality of course is quite different: involving a hefty dose of hard work, tough times and endurance alongside all the sunsets, cocktails and magic of sailing. However, a considerable benefit is that you have a chance to look at things, question them and engage with them on a level that is slightly harder to get to when on land.

Living on a boat certainly makes you more aware of the environmental impact that you have. We have to consider everything that we produce and consume, plus harness the power of the elements. It is true that most sailing yachts do have an engine, but choosing to take your time over your adventures affords you the opportunity to have as little engine usage as possible.

The very act of the wind being your main source of propulsion is bound to open up your eyes to other alternative power sources.

On our boat we have a fridge, no generator and a finite supply of fresh water.

We set off from England with this arrangement, more out of a desire to keep our boat simple and our budget under control than for any particularly ecological reasons. However, the years at sea so far have been educating us in approaching all aspects of both boating and shore-based life with a greater consciousness of the reality of our impact on the planet.

We eat on board almost all the time and the food we eat is always local to where we are staying; we live at anchor rather than in marinas; we choose to use a wind vane rather than an autopilot; we do not buy clothes very often; we conserve our water and power as much as we can and try to create as little waste as possible. By coping with being on board we had inadvertently developed an ethos, a new attitude towards our sailing existence.

However, once you choose to engage with the influence that your cruising lifestyle has on the ocean, you might discover that you have a huge number of questions about what behaviour is OK.

Are there some types of packaging that are reasonable to throw overboard into the sea? If your common sense tells you that you must never throw plastics over, what does it tell you about other materials like glass bottles, tin cans or paper? What about toilet paper? In fact, while we are on the subject, is it better to pump the boat toilet straight out into the ocean or should you have and use a holding tank?



Is it worse to be pumping out sewage that includes all the holding tank chemicals?

We found that by starting to think about these issues we would inevitably come up against difficulties, which would require us to adapt our domestic lifestyle from what it had been on shore.

### Adapting to life afloat

One of our biggest challenges in terms of thinking greener was what strategy to use on long passages at sea.

So far we have crossed both the Atlantic and the Pacific oceans, taking 21 days and 26 days respectively. For both of these passages we had more people on board than usual.

More people and a long time at sea means that you consume and produce a lot before you reach your next port. The circumstance forces you to be active in separating your rubbish and keeping different bins or containers for recycling.

We keep a 'chum' bucket in our galley for food scraps that can be easily tossed overboard when we are underway.





Plastic particles are now found in every part of the marine food chain, even in dolphins.

INSET: Turning flip-flop remnants into art.



The presence of plastics in the ocean has very little to do with industrial dumping from container ships, tankers or cruise ships. Instead the vast majority of these plastics are blown into the water, thrown into the sea or flow into the ocean after rainfall.

Amazingly, I discovered that only five per cent of plastics that we produce are recovered and recycled, 50% of them are buried in landfill and the other 45% is unaccounted for; lost in the environment where ultimately it washes out to sea.

The depressing reality is that plastic bottles, bags, food wrappers and containers are now strewn throughout our oceans and all of these are examples of single-use items.

But if you were under the impression that ocean plastics were simply a trash problem that could be solved with a thorough clean-up of the surface then think again. Plastics float and plastics sink. Only a small percentage of ocean plastics, around 20%, float on the sea surface. The other 80% that sink appear at various depths throughout the water, come to rest on the sea floor, are frozen, trapped in polar ice or are eaten by animals.

Ingestion is not the only trouble. Plastic rings from six-pack fizzy drink or beer cans cause entrapment and entanglement, leading to deformity,

malnourishment or death in many marine animals. Seabirds tangled up in fishing lines, plastic bags, balloons, bits of rubber flip-flops or even used condoms confuse animals as they look like fish or jellyfish.

The plastics that float become broken down further and further by sunlight and wave action. They get smaller but they never truly completely disappear. There are large systems of ocean currents that combine with prevailing winds that form giant, slowly revolving whirlpools called 'gyres' that are part of the delicate system that distributes water around the world.

Of the five major 'gyres' in the world's oceans, the most studied is the one in the North Pacific, off the coast of the United States also known as the 'Great North Pacific garbage patch' because of the sheer volume of tiny plastic particles that have amassed here creating a plastic soup. Some are as small as a grain of rice, but are the degraded fragments of plastic bottles, bags, toys and food containers.

You might be thinking that tiny pieces of plastic do not sound like too much of a concern, at least they are better than big pieces, right?

Wrong.

The smaller the pieces are, the easier it is for them to be mistakenly consumed by marine life. The result of which is toxicity, internal blockages, dehydration, starvation and death.

This is the case across the entire spectrum of sea animals, as plastic particles are now being found throughout the food chain; from tiny shrimps, mussels or fish, to sea birds, turtles, seals, dolphins and whales. In one area of ocean the ratio of the presence of these 'microplastics' to that of plankton was 6 to 1 in 2001. The same area was tested again in 2009 with a result of 36 to 1.

If the plastic is outnumbering the plankton then it is no surprise that it's building up in the animals that eat it. The broken down plastics also leach

chemicals into the fish and remember who else is eating the fish – us.

Plus it is not only the tiny pieces of plastic that get eaten. Green turtles have been found with larger pieces of plastic filling their intestines and birds have been found feeding them to their young.

A study was made of Shearwater chicks that had never left their nests and were entirely reliant on their sea-scavenging parents for food. It showed that in 2006 79% of the chicks had some form of plastic in their stomachs. This figure rose to 90% when the same colony was re-tested in 2011. The last study, in 2013, recorded that 100% of the birds examined had plastics inside them.

Alarming figures but how are they relevant to your average sailor? Well, it turns out that within the boating community we are not all equally eco-minded. I have known several sailors who are heavy smokers and think nothing of tossing their cigarette butts into the sea. Cigarette butts are composed of cellulose acetate, another form of plastic and one that gets eaten by all manner of sea life. If not eaten whole, each small cigarette butt takes around 10 years to biodegrade.

Other cruisers that we have met drink bottled beer and chuck both bottle and cap into the nearest bit of water. It is true that, when smashed, a glass bottle will eventually become sand again but that process takes thousands of years. Also, if it's done not far from harbour or a beach there can be quite serious cuts

and scrapes for animals and humans alike. In comparison the bottle cap will take a mere 300 years to breakdown, but is far more likely to get swallowed up by an ocean creature in the meantime.

When global sailing you often find little clusters of boats with a supermarket nearby, as cruisers take the opportunity to reprovision. Yet there are still countless numbers of them coming back from the shops, their arms heaving with plastic bags. In a bin or in landfill the slightest gust of wind can send these bags dancing out into the water. Even if you can ignore its 50 year average lifespan or that so many animals will try to eat them, surely a boater should at least be worried out of selfish concern that the bag could get wrapped around a propeller or sucked up in the water strainer?

A fellow sailor told me proudly how, when reaching the equator, she and her captain tossed over some commemorative messages in bottles to mark the occasion. However, as they were plastic ones, her memento of crossing hemispheres will take between 300 and 600 years to biodegrade. Such carelessness by someone who spends their time enjoying the sea is downright depressing.

In our attempts to be more aware of the environment on board I found even the eco-minded road is fraught with problems. Instead of a normal rubbish bag in our kitchen we purchased a greener option, a 'bio-degradable trash bag' also known as a 'controlled-life' plastic bag.

These are traditionally made from a corn starch derivative that causes the bag to breakdown. Sounds ideal but plastic is still plastic. Not only can that bag still blow from landfill into the ocean to decompose, obstruct a propeller or be eaten by a passing sea turtle, it will still take years to disappear entirely.

Another cause for concern is the growing number of products that you have probably never even considered might contain plastic. Many of these are hiding in personal cleansing products like a tube of exfoliating face wash or any toothpaste containing whitening microbeads. A 'microbead' is simply a teeny tiny piece of plastic and once you wash your face or brush your teeth these products go straight down the sink and into our waterways.

How much of an issue is it? Well, there are roughly 1,150 of these unassuming products containing 'micro-plastic particle abrasives', and a single tube of face wash can contain 330,000 of them. That means billions of 'microplastics' being introduced into our oceans every day.

### What can we do?

Before you feel thoroughly miserable, there is hope.

Sometimes it takes reading awful examples like these to force us to acknowledge that we need to change. My family lives on the ocean, we play in it, sail on it and marvel at it every day and I want to take care of it for my



Disposable nappies on a beach in the Maldives.

RIGHT: Trash piles up in Domenica, East Caribbean.

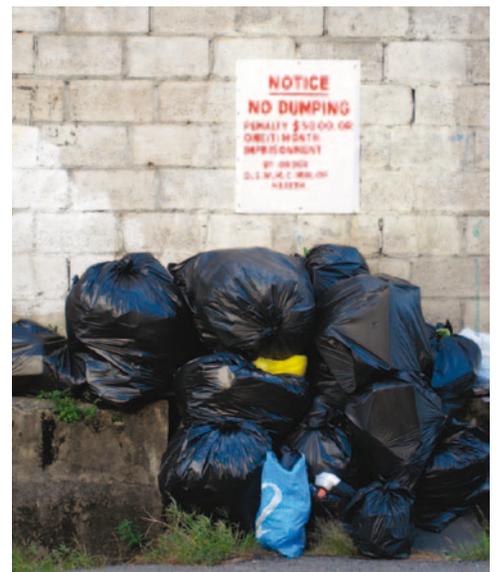


IMAGE COURTESY MACLEAN FRASER.

## TEACH YOURSELF

- Ocean Conservancy: [www.oceanconservancy.org/](http://www.oceanconservancy.org/)
- Tangaroa Blue: [www.tangaroablue.org/](http://www.tangaroablue.org/)
- 5 Gyres: <http://5gyres.org/>
- Take three: [www.take3.org.au/](http://www.take3.org.au/)
- Mission Blue: <http://mission-blue.org/>
- Two hands project: [www.twohandsproject.org/](http://www.twohandsproject.org/)
- The Ocean Ambassadors: <http://oceanambassadors.org/>
- gDiapers/gNappies: [www.gdiapers.com](http://www.gdiapers.com) or: [www.gnappies.com/](http://www.gnappies.com/)
- Ocean Sole: [www.ocean-sole.com/](http://www.ocean-sole.com/)

daughter and the generations to come. However, even for us with our solar panels, our wind turbine and our general eco attitude it means making adjustments to our lifestyle.

These changes however, can be small, really small. By limiting single-use plastics in our everyday lives and disposing of these items properly we can reduce the amount of plastic waste entering the ocean. Things like straws, coffee cups, plastic food wrap, plastic razors and of course plastic bottles.

Trying to cut down the number of these on your boat is one thing but that behaviour is also transferable to our times ashore or in a marina. If you choose to get your morning coffee fix ashore, you could take along your own cup or even buy a reusable coffee cup. Companies as large as Starbucks have been put under pressure to produce a reusable option, in the UK alone 2.5 billion coffee cups go to landfill every year. A reusable cup can help change that as long as you can remember to bring it with you any time you might fancy a spontaneous latte.

The same is true of bringing your own shopping bags with you to the supermarket when you are provisioning. OK, it might be a small amount of hassle to put them in your dinghy or backpack but at least more and more supermarkets are trying to push things in the right direction by charging you for plastic bags at the checkout. As for bottled water, it is a cheap and easy option to just buy one nice bottle or canteen and keep refilling it with tap water.



Other solutions may be less obvious but are worth discovering. In Australia alone over 30 million plastic toothbrushes are used and disposed of in landfill, amounting to 1000 tonnes each year. Horrifying. But, as you have to brush your teeth on board, you can always choose to use a bamboo toothbrush with recyclable nylon bristles, easy to find online and cheap.

What about shaving? The approximately 68 million men in the USA using plastic disposable razors produce waste that amounts to 34,000,000 cubic feet of space, not including the space needed for shaving cream cans or any of the packaging.

A straight razor or safety razor may well still have plastic components but they can be used for decades and the metal blades recycled. A choice like that can save you a fortune as well.

There is also a tradition of cruisers taking it upon themselves to don gloves, grab buckets and clean up an island. It is a process that can be quite enjoyable, like beachcombing with the results of your efforts seen straightaway.

We once met an ex-cruiser who, having settled on one of the larger islands off the coast of Panama, got up at 4am each morning and picked up every piece of rubbish on the boardwalk, just to have a beach to be proud of.

Remember our dilemma about nappies? When we asked another yachting family what their solution was we were told they thought that the carbon footprint of a liveaboard cruiser is so small that it offsets the use of disposable diapers for your kids. To me that is a cop-out as I believe that cruisers have an opportunity to lead by example, making a point of trying to adopt a best-practice approach to green living.

Yet the alternative to disposable, which we thought were the big cloth nappies done up with a safety pin that we'd both had as children, was not really going to be practical either. After some research we found a design that uses a pant with either a small cloth insert to launder or a cellulose-based biodegradable insert that can be flushed, composted or tossed to eventually breakdown completely.

So, I suppose, we found a solution that was a bit of both. Plus, we made the effort to source a good eco detergent that is gentle on the oceans for when we are washing the cloth ones.

As well as making positive small lifestyle changes it is possible to make a difference by putting pressure on larger corporations, organisations, governments and groups to implement changes that will help, even if it seems at first like an overwhelming task.

Recently California issued a state-wide ban on single-use plastic bags at supermarkets and convenience stores.

Dunkin' Donuts is being compelled by consumers to agree to stop serving coffee in styrofoam cups.

There are also other ways to improve recycling efficiency and innovate further in terms of green design. There is an environmental group that has created a machine that turns plastic waste into useable diesel fuel. The same organisation also makes t-shirts using discarded plastic bottles.

In Kenya there are thousands and thousands of flip-flops washed up onto the coast where the rubber soles are swallowed by fish and obstruct turtle hatchlings from reaching the sea. A local company transforms the discarded flip-flop remnants into colourful toy animals while encouraging others to help join them by collecting more pieces from the beach.

As cruisers, sailors and boaters, we have the privilege of free access to some of the world's most beautiful places. Our lifestyle allows us to witness first-hand some of the only remaining untouched wildernesses of remote shores. Seeing the extent of marine debris creeping ever further, stretching to even these isolated beaches in cruising paradise, has jolted me into learning how to make better choices.

As a cruiser I consider that we are true guardians of the oceans, lakes and waterways. This also puts us in a unique position to be leaders in water protection.

There are an estimated 18,000 pieces of plastic in every square kilometre of ocean. Bans, fees, recycling and product redesign are all good ways forward but none can single-handedly correct what has gone wrong. The biggest impact will come from stopping the massive amounts of plastic litter before it travels over land and into our oceans.

Pollution takes what is marvellous out of the water. All the things that we love and enjoy about it become somehow less complete and less inspiring.

The price of the convenience of plastics is too high and our remarkable oceans are paying for it. ch

**cruisinghelmsman** Jessica Lloyd-Mostyn



Jessica and husband James left their native England in 2011 aboard Adamastor, a Crossbow 42, intending

to sail around the world in a couple of years. After crossing the Atlantic and enjoying several months in the Caribbean they reached Panama, where they decided to take longer over the trip and start a family. Their daughter, Rocket, now over a year old, was born in Mexico and logged her first sea miles on their Pacific crossing in March of 2014. They married in Fiji and are spending the next cyclone season in New Zealand. Now, over 17,000 miles and 31 countries since they set off you can follow their progress at [www.water-log.com](http://www.water-log.com).

Being out on the water makes you more aware of just how important the elements are.