

Environment

The Massive, Tragic Trashing of Our Oceans: Is There Still Time to Do Something About It?

For sure there is sobering news about marine health. But it is not too late to change our behaviors.

By [Reynard Loki](#) / [AlterNet](#) May 3, 2016

It's impossible to overestimate how critical the oceans are to the overall health of life on Earth. For one thing, tiny marine plants called phytoplankton provide up to [85 percent](#) of the world's oxygen, according to EarthSky.org. But the oceans don't just give us good stuff like oxygen; they take away bad stuff, like carbon dioxide. A 2011 international study led by the University of East Anglia in Norwich, England, estimated that the oceans absorb [27 percent](#) of the CO2 produced by the fossil fuel combustion.

Sadly, humans have treated the oceans abominably. Overfishing is pushing the world's fisheries to collapse. "The global fishing fleet is [2-3 times larger](#) than what the oceans can sustainably support," warns the World Wide Fund for Nature. "As a result, 53 percent of the world's fisheries are fully exploited, and 32 percent are overexploited, depleted or recovering from depletion."

While we're taking all the fish out, we're putting incredible amounts of plastic trash in. A 2015 study by the University of Georgia and the National Center for Ecological Analysis and Synthesis found that nearly 200 coastal countries put some [275 million metric tons](#) of plastic waste into the ocean in 2010. And it's not going away anytime soon.

"A disposable diaper takes an estimated 500 years to break down while plastic six-pack rings for cans take 400 years and a plastic water bottle can take up to [450 years](#) to degrade," said Genevieve Johnson, education director and marine coordinator of the Voyage of the Odyssey, a five-year program launched in 2000 by the oceanographic research nonprofit Ocean Alliance to gather the first-ever data on synthetic contaminants in the world's oceans.

"However, this does not mean they will disappear, all remain as plastic polymers and eventually yield individual molecules of plastic too tough for any organism to digest," Johnson says.

Plastic in the oceans also directly impacts food chains, and consequently, human and animal health. "The ocean is basically a [toilet bowl](#) for all of our chemical pollutants and waste in general," Chelsea Rochman, a conservation research fellow at the University of California, Davis, told NPR's Eliza Barclay.



In 2010, 275 million metric tons of plastic waste entered the ocean. (image: Doug Woodring/Ocean Recovery Alliance)

Rochman, who authored a 2013 [study](#) about how ingested plastic harms the liver function of fish, knows all about how hazardous materials can work their way from the natural environment to our dinner plates. "Eventually, we start to see those contaminants high up in the [food chain](#), in seafood and wildlife," she says.

Clearly, we need to stop putting so much plastic in the ocean. One group that is trying to help us do just that is the [Ocean Recovery Alliance](#), a nonprofit based in Los Angeles and Hong Kong that is developing projects that focus on plastic waste reduction to help improve the ocean environment. I had the chance to ask director and cofounder Doug Woodring some questions about the scope of the marine plastic trash issue, some of the

coordinated efforts being made to stem the tide and what we all can do to help reverse this global ecological crisis.

Reynard Loki: How would you characterize the plastic trash crisis facing the world's oceans?

Doug Woodring: It's not slowing, due to growing populations and consumption. And there is insufficient recycling and waste infrastructure to go along with the use of new materials—mainly plastic—which change the way machines and equipment work. There are good opportunities here for job creation and creating value from this material, but our systems of collection and recovery are not good enough—or keeping up to speed with the widespread use of plastic packaging and material. Sadly, this gets into our environment and stays there.

It is one of the biggest challenges of our time, due to the complexity of the material. It doesn't mean it can't be tackled, but today's current global mindset is not yet focused enough on this to deliver the broad and scaled solutions that are needed. For more about this, see my [article](#) in the Economist from last year that compares cleaning up the world's oceans to the "broken windows" theory of policing in high-crime neighborhoods.

RL: What are some of the biggest misconceptions people have about plastic?

DW: That it doesn't matter. That it goes away. That it doesn't cause damage. That it doesn't impact them. That their littering won't make a big difference. That all plastic floats. (Actually almost 70 percent sinks.) Also, that just because there's a nice recycling symbol on the bottom of a container, it will somehow get recycled. In fact, that symbol only means that it *can* be recycled—provided the city you live in is able to handle that material and you make sure it gets to a recycling center by disposing of it properly. The sad truth is that 90 percent of all plastic actually doesn't get recycled.

RL: What are a few of the most staggering facts and figures that can help people understand the scope of this problem?

DW: In 2009, we went on an expedition to the North Pacific Gyre with Scripps Oceanography. We were the first in the world to sample fish there to 700 meters deep. Ten percent of all the small fish had plastic in their stomachs. This number might not seem so high, but when the scientists calculated the fish population there, and what they might be eating based on that 10 percent, in a year, the number was estimated at 12,000 to 24,000 tons per year. Of course the fish might pass the plastic, but if the plastic is carrying third-party toxins, that can get into the fish's flesh. I believe others have found that over 85 percent of all seabirds tested have plastic in them.

Sadly, all animals, big or small, from mussels to whales, and even goats, cows, dogs and cats, will all eat plastic if they can get it in their mouths. They just don't know better.

RL: What are some of the marine species that are having the most problems with plastic trash?

DW: Over 700 species are known to suffer from impacts. There is no "body count" in the ocean, so we don't know. Turtles are very susceptible to plastic bags as they look like jellyfish.

RL: Are there any coordinated international efforts to stem this tide and what is Ocean Recovery doing specifically?

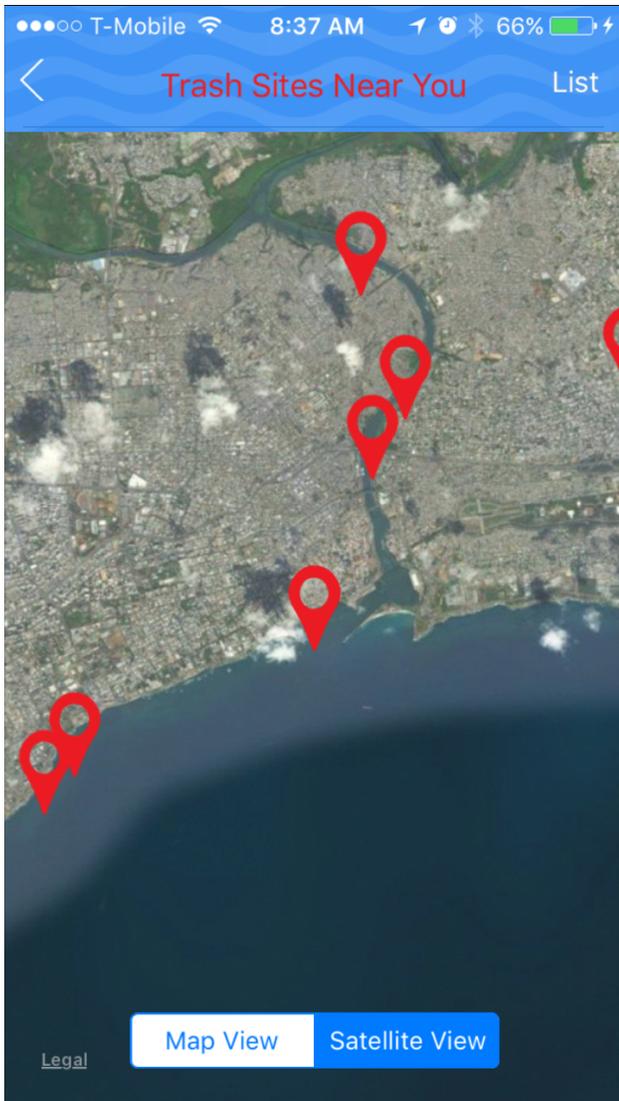
DW: It's a huge problem and requires localized solutions. There is no easy slam-dunk solution, as each river or stream or outlet is a transport channel for pollution (both solid and effluent). We have two of the only programs that exist, globally, which do not require bans, taxes or legislative changes—both were announced at the Clinton Global Initiative, and have been endorsed by UNEP and the World Bank. One is the [Plastic Disclosure Project](#), which is like carbon and water reporting. You can't manage well if you don't measure it first.

The other is our [Global Alert](#) platform, an online tool and mobile app that gives anyone the ability to track trash hotspots via their computer or mobile phones, with photos, data and geotagging helping stakeholders in any watershed or coastal area to prevent, cleanup and manage plastic in and near the water. With Global Alert, citizens and school groups can easily "See, Share and Solve" their floating trash problems.

In early April, we [launched](#) the Global Alert platform in New York's Times Square on Morgan Stanley's huge, beautiful screens on the corner of 47th and Broadway.

The Global Alert app is the most powerful tool now available on this topic, as anyone can become an engaged participant, even if they cannot pick up/clean the trash, or they don't know who to call. The visual data on a map is much more powerful and relevant than a written report or spreadsheet to a stakeholder group in any community. Once they see datapoints, they can then better decide how to do cleanups or prevention.

The real goal is to get waterways to have booms, nets or catchment devices to slow the flow. Think of rivers as blood vessels, and they flow to the heart, the ocean. Think of plastic in the water as cholesterol, and you want to stop that from getting to the heart. Sadly, globally, we have hardly even focused on constricting this flow yet. It's actually not that hard to do, but people just seem to think that if it floats downstream, it is no longer their problem.



Global Alert screenshot (Ocean Recovery Alliance)

Since most plastic also sinks, when in the murky/silty water of a river, we don't see it. It doesn't mean it is not there. We need a Global Alert to refocus attention on our waters—and this helps to solve a big fresh water issue too (see [Economist](#)), as once we clean the visual things, we can motivate cleaning for the harder problems, such as effluents.

RL: What nations are the worst offenders and what, if anything, are those nations doing to limit the amount of plastic ocean pollution?

DW: Well, much of the developing world simply does not have the waste infrastructure at all to cope, nor the islands. Why can companies sell onto islands, but not be responsible to get it back off islands (back into containers to places where it can be dealt with)? This might be the new norm in the future. If people open-pit burn it (as 40 percent of the world's waste is), that creates all types of

toxic issues, which then end up in the waters with the rains.



The Global Alert app premiered in Times Square, New York, in April. (image: Doug Woodring/Ocean Recovery Alliance)

RL: What innovations in plastic are you most excited about?

I like plastic from algae. It can clean the water, not compete with food, be biodegradable and potentially "ocean degradable," which most biodegradable stuff is not.

I also like "bring-back" programs, which get material back from customers, aggregate it, gets them into the stores and then the stores use the reverse supply chains to get the material back to the warehouse. We are doing this with the first coffee lid bring-back program in Hong Kong, with Pacific Coffee, and 30 stores now. Here's a video of the project from last year:

Now customers get a free upgrade in drink size when they bring a lid in.

I'm also excited about plastic-to-fuel technologies which liquefy plastic into a clean (i.e. low-sulfur) diesel fuel. Recycling is always the best option, but if 90 percent today is not getting recycled, there's a lot out there that can be used as a resource.

RL: What about bacteria that eat plastic? Is this a real or scalable solution?

DW: Not good for geo-engineering, but it could be good for controlled use, for sure.

RL: Are all plastics created equal; are some plastics less problematic for the environment?

DW: Some degrade faster than others, but most are still over a long time. The best ones are with non-toxic chemical additives, so that should also be a goal: to use

“green chemistry,” so the toxins aren’t there to begin with.

RL: If you could have one national law enacted that would address the plastic trash problem, what would it be?

DW: An Extended Producer Responsibility Law. Or simply, a fee on plastic use, which is used for plastic recovery/recycling. Taiwan does this and it is proven to work. All of the industry is on a level playing field. It is only fair; instead of putting the cost on all of us, it should be part of doing business. Then we won’t have the negative impacts.

RL: Is it possible to live a plastic-free life? Is that a good or realistic goal?

DW: Tough in our modern world.

RL: What about a plastic-free future?

I can’t imagine it. Not in our day. Not with nanotech coming. But it could all be plant-based plastic, and could all one day be biodegradable. Then there will be many fewer problems. But then we need the infrastructure to do the biodegrading, which virtually no cities have at scale today. But that can all come.



(image: Doug Woodring/Ocean Recovery Alliance)

RL: What is one small change every person can make in their daily lives to make a big difference?

Not buying things with plastic wrapping...like bananas and fruit! They don’t even need to be in a bag. Don’t use single-use plastic items. Decrease what you can, and re-use what you can. That can all make a difference. Tell the companies, restaurants you frequent to try alternatives to plastic cutlery, and don’t just give straws away as a habit—let people ask for them. It would save restaurants money, too.

RL: What can businesses do to help?

Do the [Plastic Disclosure Project](#), and look at themselves in the mirror as they do the report to see what their use is (or waste generation). Then they can better understand how to make differences.

RL: You participated in the recent [Plasticity Forum in Shanghai](#). What was that about?

DW: It represents one of the [first studies of its type](#) which looks at the net benefit analysis of decisions that companies have made in moving to more sustainable use of materials, packaging, recycled content, etc. This is significant, because usually companies look at the life cycle and external costs associated with their actions, but often do not look at the positive externalities which are achieved by making such decisions. It is this positive feedback and knowledge that is needed for decision-makers to have a better understanding and justification of making long-term decisions that are good for their company, the environment and the communities they serve along the way. We initiated this project with [Trucost](#), a firm that makes estimates about companies' hidden costs of the unsustainable use of natural resources. All of the parties have been involved with Plasticity in previous years, so it's a good example of how a multi-stakeholder collaboration outcome is a result of these types of forums.

We hope that companies and governments will use this [report](#) as an example for their future planning and calculations when looking beyond simply an immediate “cost” question in considering the benefits gained from moving to more sustainable products, materials, services or activities.

RL: You're a competitive swimmer and outrigger paddler, and have been nominated as Open Water Swimmer of the Year for your contributions to the sport. Has your personal physical relationship with the open water given you any special insight about the oceans?

DW: I would say that some of the ocean's powers come from its vast size, and allows you “space.” This brings peacefulness if you need to escape, but also inspiration and energy. When you are swimming or diving, you are there alone, with no sounds except the water noises around you. On the other hand, due to its vast size, people often think that it is “untouchable” and not something that can be impacted by our activities or action. But overfishing, coastal destruction, pollution and acidification have shown otherwise, and that it's not just a void that is “too big to fail.” It will grow back and become healthy and productive if we give it a chance, but we have not been giving it enough chances yet.

RL: What is one major way we can give the ocean a chance on a macro scale?

DW: One of the things we really need is 10 percent of the ocean to be dedicated as a marine protected area, more in line with the percentage of land we have dedicated to national parks. This will give the ocean some breathing room, and improve fishing and production of resources along the way. But this has to go hand-in-hand with pollution reduction.

RL: What initiative would you like the next president of the United States to immediately launch to help oceans?

Put an Extended Producer Responsibility price on materials. That would drive recycling, drive innovation, create jobs and the end benefactor will be our waters. This would be a major accomplishment.

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