

Storm Warnings: Best Practices provides timely information, trends and ideas that relate to the looming storm and impact on our lives.



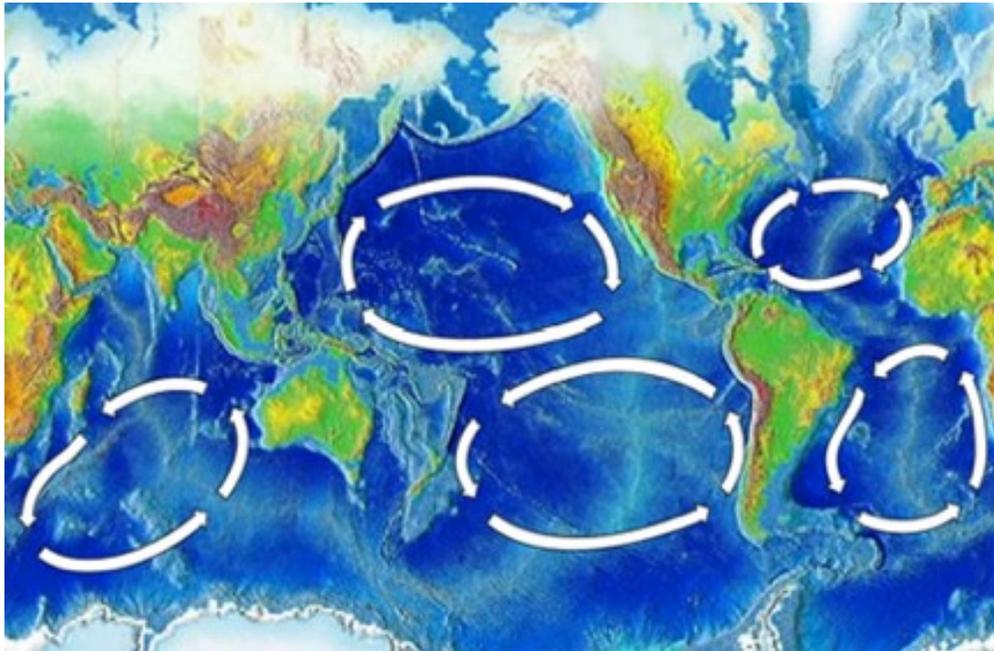
## The Ocean Cleanup

Our semi-regular Best Practices articles highlight trends, products, developments and ideas that have true sustainability at their core, and this article examines an ambitious effort to clean up the world's oceans, The Ocean Cleanup.

Plastic is one of those materials that has changed the world. Plastics have many advantages that have made modern living easier. Plastic is lightweight, chemically inert, corrosion resistant, durable, and easy to manufacture. It can be made into virtually any shape and has become a ubiquitous product in the modern household. Plastic clearly has many advantages over other materials.

Like many innovations, plastic also has many downsides. Because plastic is so durable and chemically inert, it persists in the environment for hundreds or even thousands of years. I refer to plastic bags as urban tumbleweeds. Living in the city as I do, I probably pick a few bags a week out of our lilacs that have blown in from who knows where.

Americans use more than 50 billion plastic water bottles per year, but with a recycling rate of only about 31%, roughly 34.5 billion of those bottles end up in landfills, or worse, loose in the environment, much like the urban tumbleweed, the plastic bag. Much of the plastic loose in the environment ends up in streams and rivers, which eventually empty to the ocean. Ocean currents and wind move this plastic around the seas, and most marine plastic ends up being concentrated in the five subtropical gyres, large circular ocean currents caused by wind and the Coriolis effect. You may have heard stories or seen videos of the Great Pacific Garbage Patch, a flotilla of plastic debris the size of Texas (or the size of the continental United States by some estimates) located in the North Pacific Ocean between Hawaii and California.



A young Dutchman named Boyan Slat set out to do something about all that marine plastic, and at the tender age of 17, founded The Ocean Cleanup, an ambitious project that aims to sustainably achieve a plastic free ocean by 2050. Slat was told that using traditional boats or ships with nets to make passes through the plastic and reap it from the waters would take thousands of years, and was not possible. Not satisfied with that answer, Slat and the engineers working on The Ocean Cleanup have developed a system that uses the currents and wind to push the plastic into a large containment boom made of a 1-2km long rigid high density polyethelene pipe that will float on the surface. A large screen capable of trapping particles as small as 1 cm in diameter and as large as discarded fishing nets is suspended from the boom, while a deep drifting anchor keeps the system rigid. By using a solid screen rather than nets, marine life will be able to swim under the screen without getting caught in the device. By using the energy of the waves and using solar energy to power onboard electronics and navigation systems, the project will be energy neutral. The project is iterative and designed to be improved as it operates, and is also scalable, meaning that it can be made larger as the iterations improve to have an even greater impact.

When the containment system is full, pumps and a conveyer system will transport the plastic to a support vessel that will then take the plastic back to shore for recycling. By reselling the branded Ocean Cleanup plastic and making it into durable, valuable products, the hope is that the project becomes self-sustaining. Coupled with waste-reduction techniques at source points, The Ocean Cleanup envisions a plastic-free ocean by 2050. The Ocean Cleanup's North Pacific pilot program will get underway later this year, with full scale North Pacific cleanup slated to begin in 2018. A global rollout is planned for 2020, though it was announced this week that Mr. Slat and his group have already raised \$30 million in funding, so the global rollout may occur even sooner than 2020. An ambitious project to be sure, but certainly one worth a Best Practices nod!

For more information and to follow the project, as well as links to donate to The Ocean

Cleanup, please visit [www.theoceancleanup.com](http://www.theoceancleanup.com)

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