HOME

The 25-Year-Old's Dream to Clean the Great Pacific Garbage Patch Uses a Giant Device for Cleaning Plastic

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When he was 19, Boyan Slat, today a successful and well-known entrepreneur, founded Ocean Cleanup, a non-profit organization whose goal is to eliminate harmful plastics from the oceans.

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His organization created a device twice the size of Texas to remove garbage from the Garbage Patch in the Great Pacific.

The system has gone through several stages; however, the basic concept hasn't changed.

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The device works like an enormous arm which moves with the current of the ocean and it collects debris until a vessel comes and tows it away.

Marine Debris Is a Major World Issue

Our world oceans are full of debris and the trash-filled vortex in the Garbage Patch is said to have more than 1.8 trillion pieces of floating plastic or 250 pieces of waste for every person on the planet.

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When Charles Moore, an oceanographer, discovered it more than 20 years ago, he estimated that it would require around 79,000 years and fleet of ships to remove it.

However, at only 19, Boyan Slat made a plan to lower the waste in this patch by 50 percent in only 5 years.

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As of 2013, Slat's organization, The Ocean Cleanup, has been working on a system which can passively collect trash from the patch by using the currents of the ocean.

They made a U-shaped array which catches plastic in its fold similarly to a big arm.

It was launched 2 years ago.

But, it wasn't without obstacles- after the launch; they found that the device was spilling the waste it collected. In the last year, the organization was making the needed design changes to fix this and some other challenges.

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How the Organization Improved the Garbage-Cleaning Device?

This summer, they released a new version which is now successful in the collection of plastic from the patch.

They're also researching how plastic travels through the ocean to learn why some items end up in the patch whereas others land on the bottom of the ocean.

According to their new study, plastics that goes into the ocean doesn't dissolve immediately, but it can linger in the patch for decades and centuries.

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How the Device Works?

The U-shaped system is a coastline in deep water.

It has a 2000-foot-long pipe made from high-density polyethylene. The pipe is connected to a screen going 10 feet below the surface and catches the debris.

After a crack at the bottom of the pipe spread into a fracture, they moved the screen in front of the pipe and connected it with slings.

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Also, they added a cork line behind the screen to keep it taut. In order to sweep for plastic, the system needed to move. However, it's designed not to need towing by a vessel.

This is achieved by an underwater parachute anchor which enables the device to move slower than the current of the ocean and winds and waves push the plastic debris inside the U and collected by the screen.

Are there Other Challenges?

Together with his team, Slat is working on resolving another obstacle concerning the spillage of the waste- they're working to create a cork line that would be 3 to 4 times higher.

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