



TOPIC OF THE WEEK

SEPT'18 (15 to 21)

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Topic: World's first ocean cleanup system deployed to clean Great Pacific Garbage Patch

The Ocean Cleanup foundation, a Dutch non-profit organization has taken the initiative to clean the Great Pacific garbage patch. The organization has claimed that system is first-of-its-kind and will remain for a two-week trial before continuing its journey towards the Great Pacific Garbage Patch – the world's largest accumulation zone of ocean plastics.

Background:

The Ocean Cleanup foundation, an organization founded by 24-year-old Dutch innovator Boyan Slat, launched the world's first ocean cleanup array from San Francisco on September 9, 2018. It marks the start of the cleanup of Great Pacific Garbage Patch, a collection of marine debris in the North Pacific Ocean.

Dutch inventor Boyan Slat founded 'The Ocean Cleanup' in 2013 at the age of 18 in Delft, the Netherlands. Headquartered at Rotterdam, the Netherlands, the Ocean Cleanup is a non-profit organization, developing

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advanced technologies to free the world's oceans of plastic.

Key Highlights:

The cleanup system, System 001, headed to a location 240 nautical miles offshore for a two-week trial before moving towards the Great Pacific Garbage Patch which is 1200 nautical miles offshore, to start the cleanup.

System 001 is being towed from the San Francisco Bay by the vessel Maersk Launcher.

- System 001, named as 'Wilson', will be able to collect 50 tons of plastic in its first year.
- The hard-walled pipe enables the floating component of the array. It consists of a 2000 ft long U-shaped floating barrier with a three-meter (10 ft) skirt attached below.
- This dense 10-foot skirt below the floating part of the device is supposed to help gather floating debris.
- The system is designed to be propelled by wind and waves, allowing it to passively catch and concentrate plastic debris in front of it.

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- The floating array is equipped with lanterns, radar reflectors, navigational signals, GPS, and anti-collision beacons.
- The system is fitted with sensors and cameras to help the team in monitoring its performance and make improvements for future deployments.
- The system receives the power through the solar panels.

Advantages:

Waste management has become essential and many steps should be taken to promote it. Ocean waste has to be controlled as it endangers the life of many aquatic species and humans who are dependent on the ocean.

The Great Pacific Garbage Patch is one such example which is a collection of marine debris in the North Pacific Ocean, containing up to 16 times more waste than previously thought. The Patch occupies an area three times the size of France in the Pacific Ocean between California and Hawaii with 79000 tons of plastic debris in the form of 1.8 trillion pieces.

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The Patch is also known as the Pacific trash vortex and spans from the West Coast of North America to Japan. The patch is comprised of the Western Garbage Patch located near Japan and the Eastern Garbage Patch located between the US States of Hawaii and California.

Plastics accumulated in the patch do not wear down. They simply break into tinier pieces, forming Micro plastics. The patch was discovered in 1997 by Charles Moore, who had sailed through a mishmash of floating plastic bottles and other debris on his way home to Los Angeles.

The patch is now being targeted by the Ocean Cleanup Foundation for the cleanup.

Challenges:

This is a big task and will take a lot of time and effort. The foundation aims to clean the patch through USD 32 million 'Ocean Cleanup' campaign. But this is just a start as implementation will be tough and there are many other areas that need similar treatment.

Conclusion:

The target of the organization is to clean half the Great Pacific Garbage Patch. As per the plans, the concentrated plastic will be brought back to shore for recycling and will be sold to companies. The revenue gained will help fund the cleanup expansion. The Ocean Cleanup's team consists of more than 70 engineers, researchers, computational modelers and scientists working daily to rid the world's oceans of plastic.

Once successful and if funding is available, the Ocean Cleanup aims to scale up to a fleet of 60 systems focused on the Great Pacific Garbage Patch over the next two years. The Ocean Cleanup projects that full fleet can remove half of the plastic in the Great Pacific Garbage Patch within 5 years time. This is in line with the Ocean Cleanup's ultimate goal which is to reduce the amount of plastic in the oceans by at least 90% by 2040 and become one of the leaders to free world's oceans of plastic.

Suggested Reading:

- ✓ <https://www.financialexpress.com/world-news/worlds-first-ocean-cleanup-system-deployed-at-san-francisco-bay-heres-how-it-will-catch-plastic-waste/1309391/>
- ✓ <https://www.thehindu.com/todays-paper/tp-life/ocean-cleanup-team-heads-to-the-pacific/article24911583.ece>
- ✓ <https://www.businessinsider.in/The-massive-plastic-cleaning-device-invented-by-a-24-year-old-is-headed-out-to-the-Great-Pacific-Garbage-Patch-heres-what-the-launch-looked-like/articleshow/65737861.cms>
- ✓ <https://www.theoceancleanup.com/updates/>