

Wanted: environmentally conscious students prepared to dive into the vortex

Amy Nip

Local students can compete for a place on the world's first expedition testing how to clean up a floating patch of plastic waste more than 1,000 times bigger than Hong Kong.

The estimated 4 million tonnes of plastic waste floating on the Pacific Ocean was discovered in 1997 by boat captain Charles Moore. He caught sight of the trash while on his way home after finishing a Los Angeles-Hawaii sailing race.

Called the Plastic Vortex, the trash inspired Project Kaisei, an America-based environmental organisation that studies marine pollution, to plan an expedition in July and August – and it will look for volunteers in Asian universities.

"This is one of the top 10 man-made disasters ever, but no one knows about it," said Doug Woodring, ocean and conservation expert from the Hong Kong team. "It's in the ocean and no one sees it."

Project Kaisei's pilot mission aims to test technologies and evaluate the problem before a full-scale cleanup in 18 months.

Twenty-five professionals – scientists, crew and media – and 10 volunteers will sail from San Francisco to Hawaii in two 25-day trips. A 160 foot sailing boat will carry 30 people each time to the vortex.

They will study the efficiency of different types of nets to collect the plastic, how the waste can be regenerated into diesel and how the area can be mapped by satellite.

Mr Woodring had not decided how many local volunteers he would enlist. The group was looking to get students and teachers from universities, but had not started recruitment.

The whole mission will cost about US\$1.5 million. Each volunteer will need to raise a corporate donation of US\$10,000 for their trip expenses.

The Pacific Ocean could sound remote to Hongkongers, but Mr Woodring said: "It all comes back to how we use plastic on land."

Some 8 million items of litter are estimated to enter oceans every day, according to the United Nations Environment Programme.

Hong Kong's Marine Department collected 12,913 tonnes of floating rubbish last year, its spokesman said. There were no "islands" of floating



Douglas Woodring of Project Kaisei, who wants Hong Kong students to join him on a voyage to the Pacific Ocean's Plastic Vortex (below). Photo: Felix Wong

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garbage in the city's waters as the department cleared surrounding seas daily, he said.

A mattress and wooden boards were among bulky items that the de-

partment had fished out before, he said. Most of the trash was dumped from the land, not by boat people.

Separately, Friends of the Earth Hong Kong said the plastic bag levy – which covers any retail chain that has at least five stores, and large individual retailers – should be reviewed a year after its implementation in July.

"The government should then set a timetable for the second phase of the scheme so as to remind the public and retailers that have not been covered by the scheme, including pharmacies, bakeries, department stores and wet markets, that reducing plastic shopping bags at source is our shared responsibility," senior environmental affairs officer Michelle Au said.



Talking trash

The Plastic Vortex is made up of massive amounts of plastic and other debris trapped by currents in the North Pacific Ocean



Massive whirlpool concentrates 'soup' of garbage in Pacific

Currents in the North Pacific Ocean move rubbish into calm seas, where it accumulates to form the Plastic Vortex. The North Pacific Subtropical Gyre is an oval-shaped vortex of air and water moving clockwise between the equator and 50°N latitude. Trash has been sucked into the centre of the vortex over the years.

The high air pressure and calm waters facilitate rubbish accumulation on both sides of Hawaii – known as the Eastern and Western Pacific Garbage Patch. Most of the rubbish is trapped, except for small amounts that leak into the Hawaiian archipelago during storms. Fishermen and sailors avoid crossing the gyre area, as

there are fewer fish and only light winds. That could be why the litter vortex was not discovered until the 1990s. Seventy per cent of the litter has sunk to the seabed, while the remainder floats on the water and is two to three metres deep, Doug Woodring from Project Kaisei says. The vortex is a "soup" rather than solid, as a lot of waste has

degenerated into pebble-size particles. The area's low density hides it from satellites. Of the five ocean gyres, the biggest is in the North Pacific. Asia and North America, which sandwich the North Pacific, are more populated and generate more waste, he says.

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War on floating waste deserves our support

The so-called Plastic Vortex is one of today's great man-made environmental disasters, yet no one knew about it until 1997. The scale of the pollution is simply mind-boggling. Plastic waste, carried and trapped by currents in the North Pacific Ocean, accumulates over years and forms a floating patch 1,000 times the size of Hong Kong. Despite its size, it escaped detection for years. Its low density makes it invisible to satellites; fishermen avoid the area because there are no fish and only light winds for sails. So it was discovered only by accident little more than a decade ago.

Cleaning it up will require co-operation among nations; an American environmental group is making a start, and Hong Kong students have an opportunity to help out. This is an educational, environmental and scientific project that deserves support from everyone, from governments to ordinary citizens around the world.

One reason the gyre has been allowed to fester is that it is located in international waters and is away from any human habitat. This explains why no one felt any urgency to clean it up – until now. But the longer it accumulates, the greater a threat it will pose to surrounding seas. Some of the estimated 4 million tonnes of plastic waste may be turned into diesel and other beneficial uses. Scientists with the US-based cleanup, Project Kaisei, will also test new technology to collect waste and map the vortex. The project plans to enlist local university students to help; this will be a valuable learning experience.

There are a few other, similar gyres, but the one in the North Pacific is the largest. Researchers believe most of the waste originates from land rather than from people on boats. So unless people become more alert and responsible in the way they handle rubbish, cleaning up some of the plastic waste now will not prevent further accumulation in the future.

As nations frantically prepare for final negotiations in December for a successor climate treaty to the Kyoto Protocol, people around the world need to become more aware of their responsibility as global citizens. The coming months may be a make-or-break time that will determine the future of the Earth for our children. Projects such as Kaisei help raise awareness and mobilise action. Cleaning up these gyres may not be the responsibility of any single nation or organisation. But we are all polluters; we are all responsible.