



Doug and the Plastic Vortex

By Steve White

As National Geographic Explorer-in-Residence, Sylvia Earle, has said: “Solving a problem starts with knowing you have one.”

Environmental and technology entrepreneur Doug Woodring knows we have a problem which he dearly wants to solve, but he needs all us to know about it too. That’s because he is taking on a planet-sized problem and it’ll take effort from us all to reach a solution.

Woodring wants to help bring under control the rampant pollution of our oceans with plastics. To do this he first intends to travel to the Plastic Vortex, also known as the Eighth Continent. To the uninitiated, it sounds like the plot of a low-budget 1950s sci-fi movie but this is a true story and it’s set here and now.

The Plastic Vortex is an enormous raft of floating rubbish – mostly plastics of various kinds – caught in a vast eddy in the northeast Pacific between Hawaii and Alaska. Estimates of its size vary widely

but it is something like four times the size of Japan and it is not the only one out there. There are similar vortices in the southern Pacific, in the northern and southern Atlantic, and one in the Indian Ocean. Part of the reason for their continued existence is that lying in international waters, they are in effect no one’s problem.

One thing governments have been doing increasingly is recycling, but around the world, only something like 5% of all plastic is recycled. The rest is ‘disposed’ of in various ways: by burning, burying in landfills, or being dumped straight into the sea. Island nations have a particular problem. Often having no room for or possibility of digging a landfill, they are forced to incinerate it (which also brings its raft of environmental problems) or take it out to sea.

Things made of plastic are thought to be cheap and therefore breakable, disposable, impermanent. The truth is, while the things made from plastic often break eventually, the material of which they are made

remains with us for a very long time – and it imposes a heavy subsequent cost on our environment.

Scientists say the density of plastics found in the vortex is between six and 24 times that of the plankton also found there. But it isn’t purely a problem of this vast quantity of floating debris: it is also that these plastics attract persistent organic pollutants (POPs) including such nasties as heavy metals and PCBs.

You only have to imagine a whale coming up to gulp a mouthful of supposed plankton to realise how big a problem to marine life the vortex can pose. As well as whales, countless smaller marine dwellers and seabirds are also ingesting the stuff. Many of them will die, perhaps falling prey to predators whose bodies will then bioaccumulate the toxins in turn.

Woodring’s plan – called Project Kaisei – is to publicise this problem and to do that he will set sail from San Francisco this summer on board a tall ship called *Kaisei*.

PHOTOS: COURTESY OF COASTALCLEANUP.ORG (TOP); ALEX HOFFORD/GREENPEACE (RIGHT)

A summer departure is best in terms of conditions but it depends on them raising the necessary US\$2m to get out there and to do the science they want to do.

One problem the team want to look at is how to remove the maximum amount of plastic without also taking away the living organisms in it. Excluder devices used on more modern fishing nets can help with the bigger animals but the presence of plankton means they need to carefully judge the mesh size on their nets. Mesh as fine as 300 microns should gather the lion's share of pollutants they believe, while allowing the still smaller plankton to escape, but this needs to be tried for real.

They accept there will be some collateral losses among marine life but argue that far more will die if the vortices are left to continue to grow.

They also want to test technology that team member Ed Kosior has developed to convert the collected material into a viable by-product – diesel. The hope is that this will ultimately at least subsidise if not entirely pay for the cost of taking the plastics out of

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FACING PAGE: A 'plastic beach' in the Philippines. **LEFT:** An unnatural symbiosis often develops between floating rubbish and the wildlife – but at what cost. **ABOVE:** *Kaisei*.

the world's oceans.

Underwater wildlife producer Jo Ruxton is another key member of the team, for it is her who will put together a documentary on the voyage which National Geographic will air. This will be crucial in the battle for the hearts and minds of viewers around the world.

Ruxton has long experience with the BBC's acclaimed Natural History Unit dive team, and worked on their *Blue Planet* series for five years. To ensure the best possible results, she has recruited some of the best cameramen in the business, but a production of this scope adds considerably to the cost of the expedition.

She is confident though that the film will help galvanise the effort, not least because unlike with many other environmental stories, she believes that in this case there is "a hint of a positive

outcome – it is very, very possible we can turn this thing around."

Unlike so many other deserving environment causes, this one comes down to actions that individuals can take, rather than relying on the actions of governments. Woodring, Ruxton and the rest of the Project Kaisei team believe that ultimately they will find a solution, to remove the Plastic Vortex and its twins, and turn all that waste into diesel. First though, they have to let the world know there's a problem. ▲▲

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