

# Could sharks help save shipping industry billions?

July 20 2017

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Dr. Maria Salta in the field. Credit: University of Portsmouth, UK

Whales, sharks, butterflies and lotus leaves might together hold the secret to saving the shipping industry millions and help save the planet, according to a marine biologist at the University of Portsmouth, UK.

Environmental microbiologist Dr Maria Salta is examining how on land and at sea, nature's ability to self-clean might give scientists a window into solutions which could be used on manmade objects at sea.

Dr Salta has been invited to talk about her work at three events across the globe this summer—she will present her work at a science festival in the UK, at a marine biotechnology conference in Brazil. She has also been invited to talk with her collaborator in Oman, Dr Sergey Dobretsov (Sultan Qaboos University) on how and why biofilms attach on artificial surfaces in the Gulf of Oman in comparison to UK waters.

In addition to her expertise in marine biofilms, Dr Salta specialises in environmentally friendly anti-fouling coatings which mimic natural systems to stop marine growth on ship hulls.

Dr Salta will speak at all three events about her extensive work on biofilms and her new [work](#) on biomimetics, technologies inspired by nature.

She will discuss how scientists have studied in microscopic detail what makes the skin of whales, sharks and some other marine creatures capable of sloughing off the slime (biofilms) and barnacles, mussels and algae which attach to manmade structures left in the sea for long period.

Scientists have also seen similar ability to shrug off 'piggybackers' on land, with the leaves of lotus and rice and butterfly wings particularly resilient.

It is estimated that the cost associated with hull fouling for the US Navy alone is \$US56m a year, and anti-fouling coatings contribute to greenhouse emission reductions of 384 million and 3.6 million tonnes per year for carbon dioxide and sulphur dioxide, respectively. The International Maritime Organisation estimates that without corrective action and the introduction of new antifouling technologies, [greenhouse gas emissions](#) could increase from 38 per cent to 72 per cent by 2020.

Provided by University of Portsmouth

Citation: Could sharks help save shipping industry billions? (2017, July 20) retrieved 27 July 2024 from <https://phys.org/news/2017-07-sharks-shipping-industry-billions.html>

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