

# Cesar Herada designs oil sucking drones to help clean the seas after a spill

April 12 2011, by Katie Gatto

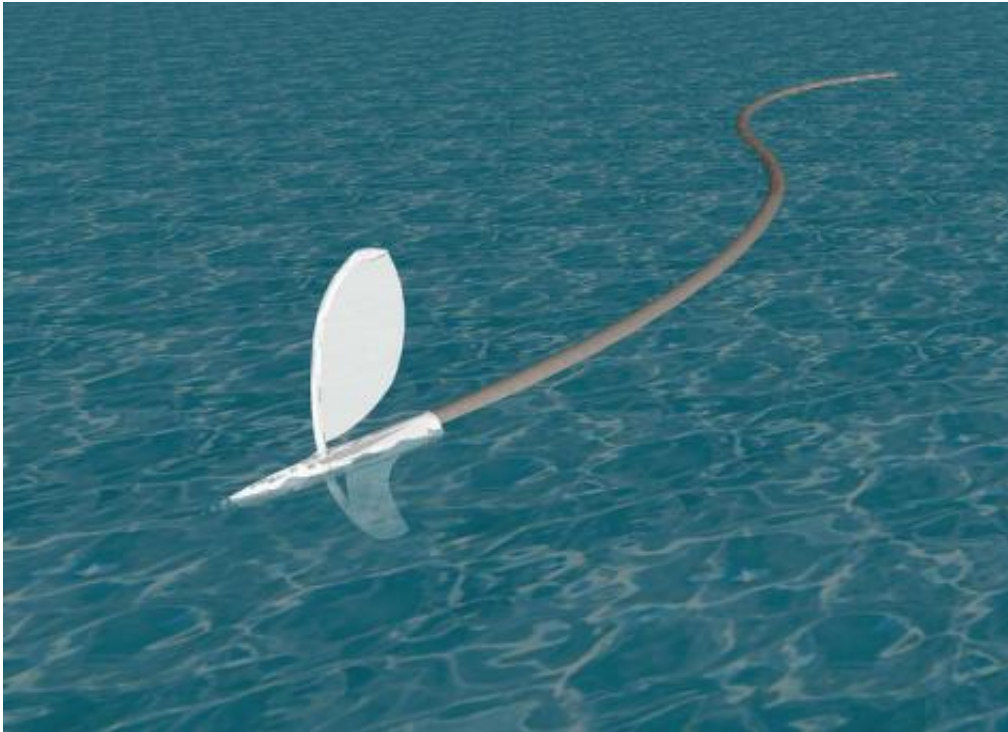
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(PhysOrg.com) -- Oil spills represent a significant danger to the oceans of the world. Many of us watched the DeepWater Horizon Oil Spill in the Gulf of Mexico and wished that there was a simple way to clean it up.

As it turns out someone with some serious skills also wanted that. Cesar Herada, a researcher who has formerly been associated with Ushahidi

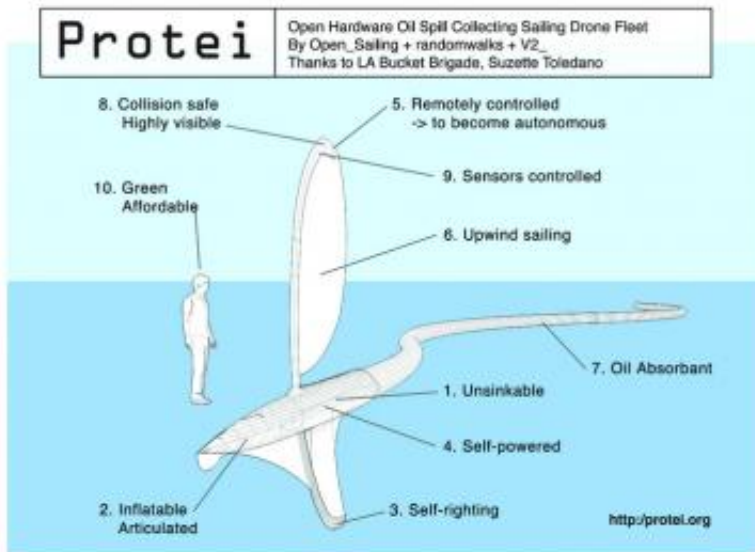
and MIT's Senseable City Lab, has created the Protei oil-spill cleaning [drone](#). The Protei oil-spill cleaning drone is designed to be a semi-autonomously device that can sail into the sea and scoop up the oil in a spill, leaving the oil in the container and the water in the ocean.



How is this accomplished? With the help of powerful oil-sucking booms that are built into the device. The oil-sucking boom is detachable, and each one is able to hold up to two tons of crude [oil](#) per trip. The advantage to using one of these devices is that no humans have to be exposed to [toxic substances](#) in order to clean up the mess.

The Protei drones are also able to be modified for other types of disasters. In the future modified versions of the Protei drones may

possibly be sent in to detect the levels of radiation in water supplies, or to collect samples of other potentially polluted waters. The designers have also mentioned that there may be some commercial uses for the Protei drones as well, but they did not give any specifics on this point.



Human resources are limited and cleaning oil means being exposed to toxic pollutants. Cleaning oil spills could happen much more efficient and safe when vessels would operate autonomously. Protei is a fleet of autonomous oil spill collection vessels. Each Protei vessel consists of a sailing propulsion head and a long oil absorbing tail. Protei is based on the simple premise that because an oil spill moves and spreads down winds, currents and waves, the most efficient way to clean it is to use these same natural forces to sail upwind while capturing oil.

To collect the oil, Protei is equipped with a conventional oil absorbing boom as tail. This boom tail can take up to 25 times its own mass in oil and can be reused many times. A Protei fleet can reach far remote places to collect a spread oil spill and can operate in storms and difficult waters due the inflatable, self-righting and collision-safe design of the individual vessels.

This design is extremely affordable, and distributed as Open Hardware so anyone can contribute, use, modify and commercialize it.

All over the world oil and various other pollutants are spilled in our waters constantly, and every spill's context is different from another. Therefore, Protei is not only a powerful water clearing design, but also adjustable to any local condition by anyone due to its Open Hardware philosophy. You can be part of its development.

<http://protei.org>

1. Unsinkable
2. inflatable articulated
3. Self-righting
4. Self-powered
5. Remotely controlled
6. Upwind Sailing
7. Oil Absorbant
8. Collision safe
9. Sensor controlled
10. Green, affordable
11. Open hardware



The best part is that Protei is an Open Source Hardware project. This

means that its design will be available to the public, so it can be built by anyone. The remote controlled Protei is relatively inexpensive to produce and inflatable.

**More information:** [sites.google.com/a/opensailing.net/protei/](https://sites.google.com/a/opensailing.net/protei/)

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