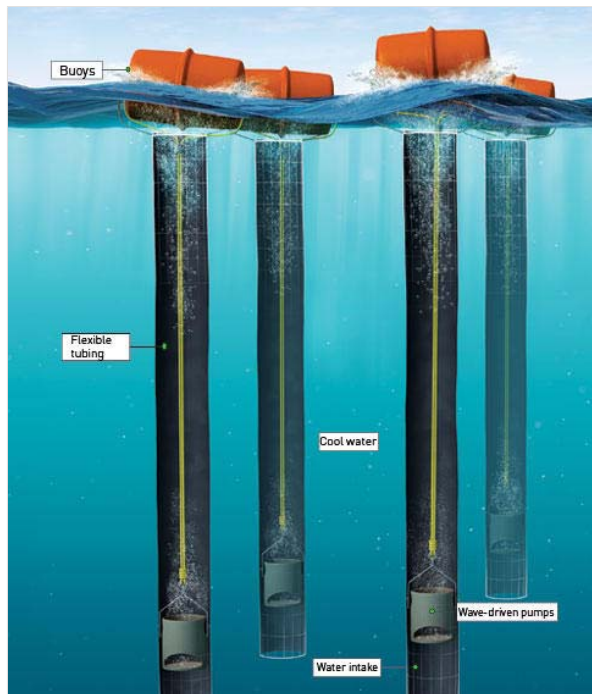




Duct Tape Methods to Save the Earth: Tame Storms with Cold Water

A million straws could mellow the next Katrina

By Rena Marie Pacella; Illustrations by Graham Murdoch Posted 06.29.2007 at 2:00 am



straws_485.jpg

Where: Gulf of Mexico

Cost: \$5 billion

The Problem

Climate change is warming the oceans. Warm oceans fuel hurricanes, which draw their energy from the heated, moist air at the sea surface. As sea temperatures continue to rise, some scientists warn that tropical storms will intensify.

The Fix

Cool down the warm surface water that storms need to grow. New Mexico inventor Phil Kithil wants to put 1.6 million ocean-cooling "pumps" into the Gulf of Mexico, anchor them to the seafloor, and watch as they turn category-4 whoppers into category 3s, and 3s into 2s. It would take four months, some 100 barges and \$5 billion to install, but once in place, the 1,000-mile-long band of water coolers would kick in whenever a storm started brewing.

Next month, Kithil will set sail for Bermuda with 10 of his wave-powered pumps and attempt to cool a one-third-square-mile patch of sea. Dropped from the deck of his ship, spools of barrel-width flexible tubing will unravel to form 650-foot-long cylinders. These are topped by buoys that bob up and down with each passing wave and drive pumps that draw cool, nutrient-rich water up from the deep ocean. Bigger waves mean more cooling, and, conveniently, big waves precede hurricanes. "So we get cooling only when we want cooling," Kithil says, "when there's a hurricane on the horizon."

His company, Atmocean, has already tested individual pumps, and they temporarily lowered surface temperature by 7F. The results might not be so dramatic in the large-scale trial, but models show that even a 1F drop would reduce hurricane winds by 5 percent. According to Kithil, a drop in wind speed from 120 to 110 mph would reduce property damage by 23 percent.

Next Steps

Kithil's team will measure the effects on marine life. They hypothesize that the water's increased nutrient levels will improve the health of the ocean food chain and possibly enhance the ocean's natural ability to sequester carbon by encouraging the growth of plankton (also a food source for fish) near the sea surface.

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2 COMMENTS

[sujata garg](#)

07/21/09 at 5:03 am

Dear Mr. Kithil,
Congratulations! you have really done a great job for the benefit of entire humanity.

In this regard, we want to bring to your kind notice that the principle of diffusing tropical cyclone by resorting to artificial upwelling in the ocean itself has pioneered in India by Independent Innovator Surya Prakash Kapoor. He has already mentioned this in many international conferences and this concept has been recorded in the proceedings of the world congress. However, we preferred diffusing cyclones by OTEC plants. Now, we expect you to acknowledge this fact and if possible please try to Work upon this as with this method cyclones can be diffused at the time of formation only and electricity can also be produced simultaneously.

With Regards,
Sujata Garg.

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[WilliamBoston](#)

09/05/10 at 11:17 pm

The article states that the upwelling of the cool nutrient-rich water will encourage the growth of plankton near the surface. But that will increase the surface temperature, due to greater absorption of sunlight by the plankton and due to the energy generated in the process of plant growth. And the increase in plankton will spur the increase in animal life feeding on the plankton, which again will increase the ocean temperature, due to the metabolic processes of all animal life. In addition, the surface heat is distributed to lower levels, but the total heat content of the ocean is actually increased for two reasons: (1) the energy dissipated by the mechanical action in mixing the cool and warm waters, and (2) hurricanes' remove massive amounts of heat from the ocean, so if that process is buffered or diluted, ever-greater heat will build up in the ocean. And the greater buildup of heat will serve as a greater amount of fuel for the next hurricane which comes along.

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