ECUADOR: Doubts Surround Carbon Absorption Project Near Galapagos

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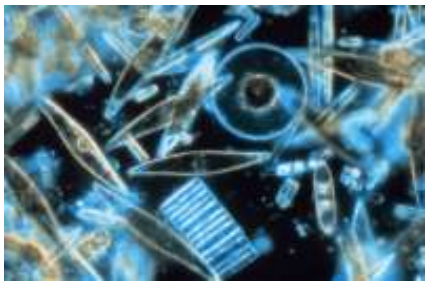
by Stephen Leahy (IPS News)



Diatoms are one type of plankton.
Credit: NOAA/Neil Sullivan USC

PUERTO AYORA, Galápagos, Ecuador, Jul 13 2007 (IPS) – Later this month a U.S. company, Planktos Inc., plans to dump 100 tonnes of iron dust into the ocean near Ecuador's Galápagos Islands, despite opposition from environmental groups and marine scientists.

This will be the first-ever commercial effort to reduce carbon dioxide in the atmosphere, one of the main gases blamed for climate change, by using iron particles to create a 10,000-square-kilometre "plankton bloom".

Planktos says the extra volume of these small, floating organisms will absorb large amounts of CO2 from the atmosphere and take it deep into the sea. And this method may be the fastest and most powerful tool to battle climate change.

"The currents will likely bring the bloom into the [Galápagos] Marine Reserve," covering 133,000 sq. km, the world's third largest marine reserve, says Washington Tapia, director of the Galápagos National Park, which includes the reserve.

"We don't have any idea what will happen... We have tried to contact Planktos to get more information, without success," Tapia told Tierramérica in Puerto Ayora.

The 19 islands of the archipelago, located 1,000 km from the Ecuadorian coast, and the surrounding seas are seen as a prime example of natural history, and inspired part of Charles Darwin's theory of evolution after visiting the Galápagos in the 19th century.

"Why is this being done so close to the Galápagos, a World Heritage site," asks Pablo Barriga, project coordinator for FUNDAR Galápagos, a non-profit organisation based in Puerto Ayora that supports sustainable development and conservation of the islands.

"Some scientists say there may be ecological risks with this experiment. Why not do it elsewhere in the Southern Ocean?" Barriga said in an interview.

Planktos is in the new and growing business of carbon sequestration. "Removing CO2 from our oceans and atmosphere by healing the seas, growing new climate forests, and erasing carbon footprints" is the Planktos vision according to its website.

Sequestration means that trees the company plants in Eastern Europe absorb carbon from the atmosphere as they grow. That carbon is trapped for 60 or 80 years, depending on the lifespan of the tree. In Europe, Planktos can sell

carbon credits to companies to offset their own emissions to meet local or international regulations.

Ocean carbon sequestration has been tested in several small experiments over the past 20 years. Most have shown that adding iron to ocean waters with an iron deficit – like the Southern Oceans – will promote growth of plankton, which need this nutrient to live. And since the plankton absorb carbon, this boosts the amount of atmospheric carbon taken up by the ocean fauna.

However, in choosing the Galápagos for its first large-scale ocean sequestration experiment, Planktos sparked a firestorm of protest.

“There’s a real risk that this experiment may cause a domino effect through the food chain,” said Sallie Chisholm, microbiologist and board member of the World Wildlife Fund, in a statement.

The Planktos project “threatens our climate, our marine environment and the sovereignty of our fisherfolk, and it should be stopped,” according to Elizabeth Bravo of the Ecuador-based Acción Ecológica.

But Planktos maintains it is only trying to correct imbalances caused by human activities, including climate change, that have cut the natural aerial dust delivery of iron to the open oceans by nearly 30 percent in the last three decades.

“This has resulted in serious ecological impacts, namely a 50 percent die-off of plankton in many regions,” says Planktos spokesperson David Kubiak.

And one of the regions suffering from this decline is 300 to 400 miles west of the Galápagos, where the company plans to put 100 tonnes of micron-sized iron particles into the ocean, Kubiak told Tierramérica.

“The waters in the Galápagos region itself have plenty of iron and any excess iron or plankton from our experiment won’t cause any problems for the marine life there,” he says.

This is the first of six experiments adding iron to oceans that Planktos hopes to carry out over the next two years.

The company believes that if plankton were restored to 1980 levels it would annually remove three to four billion tonnes of CO_2 from the atmosphere, helping to slow global warming five times more effectively than immediate universal compliance with the Kyoto Protocol on climate change, which obligates industrialised countries to reduce greenhouse gas emissions.

A February 2007 article in “Science” magazine reviewed previous experiments – called iron enrichment or fertilisation – between 1993 and 2005. Scientists concluded that large-scale enrichment could affect the planet’s climate system and that more study was necessary.

“It works – enrichment does remove carbon from the atmosphere. But we do not know how long carbon will be removed,” says co-author Kenneth Coale, director of Moss Landing Marine Laboratories, in California.

Planktos is simply taking previous experiments to the next larger-scale level and will monitor the effects for up to six months on average, says Kubiak.

If the company can verify how much carbon is sequestered, then the sales of carbon credits likely will more than cover the costs of the experiments, he says.

“I think it should be carried out under the umbrella of a United Nations agency which we (various colleagues) are trying to set up,” Victor Smetacek, another co-author of the Science report and a bio-oceanographer at the University of Bremen, Germany, told Tierramérica in an e-mail interview.

However, such large-scale experiments in oceans suffering from overfishing and the impacts of climate change make many scientists nervous.

“It is far too soon to market iron fertilisation as a carbon sequestration tool,” says Ed Boyle, with the chemical oceanography group at the Massachusetts Institute of Technology, in the U.S. city of Boston.

“There is too little known about the effectiveness of large-scale, human-injected iron (compared to natural iron)

and the consequences of this injection," Boyle told Tierramérica.

UNESCO (UN Educational, Scientific and Cultural Organisation) on Jun. 26 added the Galápagos Islands to its list of World Heritage Sites in Danger, due to impacts and threats from illegal immigration and fishing, invasive species and a booming tourism industry.

"The last thing we need here is another environmental problem," says park director Tapia.

(*Stephen Leahy is an IPS correspondent. Originally published by Latin American newspapers that are part of the Tierramérica network. Tierramérica is a specialised news service produced by IPS with the backing of the United Nations Development Programme and the United Nations Environment Programme.)