

# CARBON OFFSET SCHEMES WORSEN GLOBAL WARMING IF TREES ARE PLANTED IN THE WRONG PLACES

Many carbon offset schemes rely on planting new trees to counteract rising carbon dioxide levels and the climate change they cause. But new research shows that these schemes only work if trees are planted in the tropics. Plant elsewhere, and you'll only be adding to global warming.

Plant a tree and save the planet. If it sounds too good to be true, it's usually because it is.



It is now crystal clear that modern global warming is a man-made phenomenon. But with this acceptance comes guilt, and the quest to find ways of mitigating our energy-hungry lifestyles

On the surface, carbon offset schemes appear to offer a win-win solution. People can assuage their guilt over yet another business flight, or drive to the shops, by paying for trees to be planted or investing in renewable technology.

Trees act as carbon sinks, sucking the gas in from the air and shunting the carbon atoms across into the plants' own molecules. So plant enough trees, and the emissions you are responsible for will effectively be negated. You can whistle a jaunty tune and slap a carbon-neutral sticker on your car.

That's the theory anyway. But Govindasamy Bala and colleagues from the Lawrence Livermore National Laboratory have found that it's not just what you plant that matters, it's *where*.

They ran complex simulations of how the planet's climate would change if trees in different parts of the world were removed or restored. Unexpectedly, they found that overall, deforestation cools the planet down, and adding new trees in some regions may actually fuel global warming.



In a simulation where all the world's trees were removed, the global temperature fell by about 0.3 degrees Celsius.

Why should this be? After all, trees soak up carbon dioxide and store carbon in their bodies – this keeps the planet cool.

They release water vapour into the air, which forms clouds that reflect solar radiation away from the earth, again resulting in cooling.

But forests are also dark and by absorbing the energy from sunlight, they heat the planet too. According to Bala's simulation, this heating effect outweighs the cooling ones.

When Bala looked at the effect of deforestation in specific areas, a clearer picture emerged. The tropical rainforests are doing their bit in fighting global warming by forming clouds and absorbing carbon dioxide. Their loss led to a rise in global temperature.

In contrast, the temperate and polar forests aren't pulling their weight. These verdant slackers heat the planet themselves by absorbing solar radiation. Without them, the underlying snow would reflect more of the sun's energy into space and we'd get a cooler planet.



These experiments suggest that tree-planting will only help to restrain global warming as planned if it happens in the tropics. In other parts of the world, it could

even do more harm than good. When it comes to carbon offset schemes, the devil's in the details.

Bala and his co-workers are modest on their work and are quick to point out that it is based on a single simulation. And they are careful to quickly stem the inevitable backlash from anti-environmental groups, who may well perversely suggest that this data warrants declaring war on trees.

Forests clearly have value beyond their influence on temperature. They harbour a great richness of life, keep the soil together and stop the oceans from acidifying by storing carbon dioxide – the list goes on. Deforestation is clearly not a solution to global warming, but wanton re-forestation won't do any good idea.

Bala's study gives pause for thought to those of us who seek to placate our environmental consciences by paying into carbon offset schemes.

At the very least, the details of any schemes should be checked carefully. Even better, serious thought should be given to preventive measures, like reducing car or plane use, rather than cures.

Source: <https://notexactlyrocketscience.wordpress.com/2007/04/16/carbon-offset-schemes-worsen-global-warming-if-trees-are-planted-in-the-wrong-places/>