

OUTDOORS & ENVIRONMENT

What are forest carbon markets?

Ethan Tapper, Chittenden County Forster October 26, 2023

If you're tuned into what's happening with forests in our region, you may have heard that we can manage forests for carbon and be paid for it. But what are "carbon markets," and what do they mean for the way we manage our forests?

The idea of carbon markets is to create a marketplace where carbon emitters pay for practices that sequester and store carbon somewhere else, thus balancing their emissions of carbon or other greenhouse gasses. The units of carbon that emitters purchase through carbon markets are called carbon offsets.

There are two types of carbon markets: regulatory (compliance) markets and voluntary markets. In regulatory markets, such as in California and in Europe, greenhouse gas emitters are issued "allowances," essentially permits to produce a certain amount of emissions, which can be sold or traded. If they produce greenhouse gas emissions beyond their allowances, emitters are allowed to purchase some carbon offsets to lower their net emissions and bring them into compliance. In regulatory markets, greenhouse gas allowances are gradually reduced, thus lowering overall emissions over time.

By contrast, voluntary carbon markets sell offsets to emitters that wish to voluntarily balance their carbon emissions. By purchasing voluntary carbon offsets, a carbon emitter like a person, a government agency or a corporation can claim to have reduced their net greenhouse gas emissions, or even to be “carbon neutral.”

Forests naturally sequester and store carbon, and so both voluntary and regulatory carbon markets have looked to forests as places to generate carbon offsets. While producing carbon offsets for regulatory markets is more lucrative, it generally isn't feasible for forests in our region; the forest carbon markets that you're likely hearing about in Vermont are producing offsets for the voluntary carbon market.

In essence, forest carbon markets pay for forest landowners to do, or not do, practices that lead to a higher-than-normal amount of carbon being stored in their forest. Practices may include planting trees (afforestation), reducing deforestation and improved forest management practices like letting trees grow bigger and older before harvesting them. The higher amount of carbon stored in the forest after the landowners do (or don't do) these practices, as compared to forests engaged in “business as usual,” is called additional carbon – that's the amount of carbon that can be sold to someone else as a carbon offset. The trickiest part of these carbon markets is proving this additionality: that the carbon offset being sold to an emitter represents real, additional carbon stored in a forest that wouldn't have existed without the carbon market.

For instance, if “Bob” doesn't manage his forest for the next 20 years, he can say that the greater amount of carbon in his forest (as compared to other forests in his area, managed under “business as usual” practices) is additional and can be sold as an offset. Unfortunately, forest carbon markets can't judge Bob's intent. If Bob wasn't going to manage his forest for the next 20 years anyway, the carbon market hasn't changed his behavior or led to any more carbon being stored in Bob's forest. In this case, one could argue that Bob has actually made things a little worse: after 20 years the same amount of carbon dioxide will be in the atmosphere as would have been there anyway. The only difference that the carbon market made is allowing an emitter to claim to have lower net carbon emissions.

Another concern to be aware of is leakage: storing carbon in one place and emitting carbon somewhere else. If Bob starts heating his house with fuel oil instead of firewood from his land, or buying lumber from forests somewhere else instead of engaging in responsible forest management on his own land, his entry into a carbon program has actually caused more carbon to be emitted.

Carbon markets may also be a force for good, promoting more carbon-friendly practices in the woods, providing an economic incentive to keep forests as forests and giving landowners money that can be reinvested in the responsible stewardship of their forest. But, like timber markets, they aren't inherently good or bad; the benefits of forest carbon markets will depend on the nuances of how they are applied in our forests.

For more information about forest carbon and carbon markets, check out [these articles by Ali Kosiba in Northern Woodlands magazine](#).

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