

# **Selling Carbon Offsets: A Potential Source of Funding For Forest Conservation**

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New sources of funding for land conservation are needed as land trusts grapple with the loss of public acquisition dollars and worry about having picked all of the low-hanging land and easement donations. Land trusts are thinking more broadly in terms of partners and innovative methods to protect open space in the 21<sup>st</sup> century. The burgeoning carbon offsets<sup>1</sup> market for forest projects, while sometimes complicated and potentially risky, offers much for land trusts looking for new opportunities to conserve land.

Normally the presence or absence of development rights fuels the financial engine of land conservation, not the intrinsic value of the natural resource being protected. The fact that in the carbon offsets market intact forests may have a commercial market value such that a landowner could derive an ongoing income for *growing* trees rather than cutting them is starting to catch people's attention.

In these very early stages of a functioning carbon offsets market for forest projects, several land trusts have had success with registering forest projects, selling offsets and receiving a significant financial return for their pioneering efforts; others are finding the process daunting, expensive or are waiting on the sidelines before wading in. Here's a general overview of what you need to know, with links to more specific information.

## **Trees Should Get More Credit**

Forests are the most effective, expandable ecosystems on earth at removing carbon dioxide (CO<sub>2</sub>) from the atmosphere<sup>2</sup> and storing it as carbon safely for the long term. When forests accumulate and hold carbon, they act as carbon "sinks" and help lower emissions overall. When forests are disturbed by logging or conversion, they release carbon and add to greenhouse gas emissions (GHG) overall.<sup>3</sup>

It is intriguing to think that a commercial market would place a dollar value on forests for what they do naturally. Just such a marketplace is starting to take shape in California. Big emitters of CO<sub>2</sub> such as Chevron and Pacific Gas & Electric, pushed by pioneering climate legislation with stringent penalties for noncompliance, have come around to paying large forest landowners for allowing their trees to do what they do best: sequester CO<sub>2</sub>.

Land trusts, some of which have been conserving forests for more than 100 years, will no doubt want to partake in a market that encourages forest conservation, reduces GHG emissions and potentially earns an income stream for the forest landowner. As with any groundbreaking new venture, however, there are risks that land trusts should be aware of before making a recommendation to a landowner or offering up a land trust's own precious conservation lands to the rapidly evolving market of carbon offsets.

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<sup>1</sup> A carbon offset, or carbon credit, is a financial unit of measurement that represents the removal of one ton of carbon dioxide equivalent from the atmosphere.

<sup>2</sup> Carbon dioxide is one of six primary categories of greenhouse gases in the Earth's atmosphere.

<sup>3</sup> Pacific Forest Trust (<https://pacificforest.org/Forest-Carbon-Projects.html>). *NB:* Carbon remains sequestered in stable wood products such as flooring or furniture.

## How Do Carbon Offsets Markets Work?

### *Voluntary*

There are two major categories of carbon markets: voluntary and mandated cap-and-trade. Voluntary markets were the first to become available as the cap-and-trade regulated markets were being developed. The California voluntary carbon market, which has been in existence since 2003, allows businesses and individuals wishing to offset their carbon footprint to voluntarily buy carbon offsets. Governor Arnold Schwarzenegger and Congresswoman Nancy Pelosi were early purchasers who set a good example.

Although the sale of carbon offsets on the voluntary market can derive some remunerative benefit for the forest landowner, the price per metric ton is lower<sup>4</sup> than for “compliance” offsets—those mandated by the cap-and-trade regulations discussed below. While voluntary offsets markets are still functioning, now that compliance offsets have come into fruition,<sup>5</sup> from a revenue standpoint it makes more sense to attempt to register a forest project with the more lucrative compliance offsets market.

Pacific Forest Trust (PFT), based in San Francisco, a leader in developing policies for GHG reductions through forest conservation and sustainable management, was an early participant in the California carbon offsets market. In 2002, PFT began managing 2,200 acres of redwood forest in Humboldt County, California, owned by the Van Eck Forest Foundation. PFT knew that participating in the carbon offsets market was synergistic with its long-term forest management goals.

The Van Eck Forest Project became the first forest project registered under California’s voluntary offsets market. In addition to protecting significant habitat and restoring a native redwood ecosystem, the emissions reductions generated by the project represent the equivalent of taking 123,000 cars off the road for a year. From 2005 to 2009, the Van Eck Forest Project earned \$2 million from the sale of carbon offsets. This revenue more than covered all project development and operating expenses, as well as returning substantial income to the landowner.

Laurie Wayburn, PFT’s president and co-founder, remarks, “Having led the development of the policy and protocols enabling forest carbon offsets, we wanted to illustrate how these projects were done, what they cost and what the potential pitfalls were. Participating in the carbon offsets market is entirely consonant with what we normally do in terms of management plans, inventorying timber, monitoring growth and sustainable timber harvest. As the first project, a lot of learning was done on the Van Eck. It really showed us the compatibility of long-term conservation management and ecosystem services

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<sup>4</sup> As of December 2013, the price per metric ton on the voluntary market is less than \$2; the price per metric ton on the ARB compliance market is \$10-\$12 (Climate Action Reserve).

<sup>5</sup> The first compliance carbon offsets for forests were issued in November 2013 (Climate Action Reserve). See Downeast Lake Land Trust’s Farm Cove Project, discussed below.

markets. It particularly shows how we can reverse the loss of forest carbon—which is the second largest source of CO<sub>2</sub> globally.”

PFT is in the midst of transitioning the Van Eck Forest Project to a compliance offsets project. The result will mean that future sales of carbon offsets from the Van Eck Forest will yield better prices. PFT has subsequently helped landowners and land trusts across the United States develop and register offsets projects for the California market.

### ***Mandatory***

Although Congress has not passed cap-and-trade legislation, the Environmental Protection Agency has taken steps to reduce GHG emissions from motor vehicles. The absence of a federal program has left a vacuum for the states to fill. In 2006, California, the 15<sup>th</sup> largest emitter of GHG worldwide, passed the Global Warming Solutions Act (AB32) that established a goal of reducing the state’s GHG emissions to 1990 levels by 2020. The California Air Resources Board (ARB), the lead agency responsible for implementing AB32, was given explicit authority to develop market-based programs. After extensive stakeholder input, ARB developed what is today known as the California cap-and-trade program.

The California cap-and-trade program creates an economic incentive to reduce emissions by placing an absolute cap on the amount of GHG that can be emitted by a regulated entity.<sup>6</sup> If a regulated entity exceeds its emission allowances, it must purchase more allowances or trade with other regulated entities.

In turn, the need for regulated entities to account for their emissions creates the market demand for carbon offsets. Regulated entities need to buy carbon offsets; forest landowners have carbon offsets to sell depending on the size of the forest and its ability to store carbon. To help create a supply to meet the demand for offsets, AB32 allows regulated entities that are emitting in California to purchase carbon offsets generated from projects located anywhere in the United States, except Alaska. This means that forest landowners across the country can potentially sell carbon offsets on the California market. The California regulated market currently is the largest carbon market in the world that allows managed forests to generate offsets credits.<sup>7</sup>

It should be noted that the oldest mandatory cap-and-trade system in the United States is the Regional Greenhouse Gas Initiative, or RGGI.<sup>8</sup> While RGGI has provided revenue for renewable energy initiatives in the participating nine Northeastern states, the program has not had nearly the same effect in reducing GHG emissions as the California program for several reasons. RGGI applies only to power plants generating 25 megawatts or more and only to CO<sub>2</sub>, the cap under RGGI is not as stringent as California’s in that the regulated entities do not have as much incentive to purchase offsets, offsets may account for only 3.3% (as opposed to 8% under the California program) of a regulated entity’s compliance

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<sup>6</sup> In 2013, regulated entities included electric generating utilities, electricity importers and large industrial facilities. In 2015, fuel distributors will be added.

<sup>7</sup> [www.ecotrust.org/forests](http://www.ecotrust.org/forests)

<sup>8</sup> RGGI involves nine states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont.

requirements, and offsets projects must be within the nine participating states (as opposed to anywhere in the United States under the California law). Finally, at present, RGGI has no mechanism for forest projects.

### **Developing Forest Projects for Registration**

To register as a forest project, which enables the sale of carbon offsets, one must follow the forest project protocols established by ARB<sup>9</sup>. Projects must be on forests that occur naturally in a region, have forest management above the standards required by law and create climate gains that endure at least 100 years.

To summarize the process, first a timber inventory must be completed. The inventory, which is more rigorous than a typical timber inventory done for a forest management plan, involves detailed field sampling and measurement of the various carbon pools. An inventory costs an average of \$100 per plot with a plot every 5 or 10 acres depending upon the diversity of the forest.

Initial project development also requires translating the inventory into a sophisticated—but by now standard in the timber industry—modeling of carbon volumes. This establishes the baseline of carbon storage, which is the amount of carbon that would be stored in a forest without the new forest project. This volume is then compared with the standard baseline for that particular forest and region to determine if the project is viable. A project plan for how the forest will be managed to increase carbon storage must then be developed and submitted to one of the carbon registries approved by ARB.<sup>10</sup>

Once all of the project fieldwork, modeling, and the project plan have been submitted to and accepted by the chosen registry, a third-party verifier accredited by ARB must perform a verification. Verification includes a site visit to review the property and the accuracy of the inventory. It also includes an office visit to review the management plan, carbon modeling and project documents. The high degree of accuracy required by the verification process ensures that the forest will indeed store carbon for the long term.

To be accepted into the registry, a forest carbon project must establish that it will result in *additional* carbon sequestration beyond business-as-usual. This standard is required to ensure the atmosphere truly benefits from increased, durable CO<sub>2</sub> removals. A project will not receive offsets if the proposed management plan does not go beyond what is required by state laws, for example. Or, if allowing trees in one location to grow more results in the increased cutting of trees in another location under the same ownership (something known as “leakage”) such that overall, no increased gains are made, there is no credit awarded.

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<sup>9</sup> ARB has developed protocols for four types of offset projects: ozone depleting source, forest, urban forest and livestock methane.

<sup>10</sup> ARB has approved the American Carbon Registry and the Climate Action Reserve as offset project registries to help evaluate compliance-grade carbon offsets under California’s cap-and-trade program. ARB has also accredited specially trained third-party offset verifiers.

Forest projects also need to guarantee that each additional ton of carbon is stored for at least 100 years. This is known as the “permanence” requirement and should be familiar to land trusts. Some projects are meeting the permanence requirement through rolling 100-year contracts that prevent the landowner from harvesting below a certain level of growth; others are utilizing working forest conservation easements.

If the verification of the proposed forest project is accepted by the registry, the forest owner will receive an allocation of carbon offsets. At that point, the marketing and sale of the carbon offsets to prospective buyers may begin. The whole process takes about six to eight months. After a project is registered, ongoing requirements include annual reporting and site verification including an inventory of the forest plots every six years. The issuance of future offsets is based on the difference between the baseline and actual carbon storage.

To assist forest owners with assessing the feasibility of a project, the registration process, selling carbon offsets, and with ongoing verification requirements there are dozens of forest carbon project developers and consultant advisors. Examples include PFT, LandVest, Ecotrust, Forest Carbon Partners, Blue Source, and Finite Carbon. These organizations have licensed professional foresters on staff as well as in-house expertise on ARB’s protocols and working with the two approved carbon registries.

### **How Land Trusts Are Getting Involved**

Several land trusts that own large tracts of forestland<sup>11</sup> have either started the process or successfully registered a forest project.<sup>12</sup>

Most of the forest projects involve large conifers such as Douglas fir or redwoods. Placer Land Trust (PLT) of Auburn, California, has the distinction of being the first to attempt to register an oak woodland forest. PLT’s 1,773-acre Harvego Bear River Preserve is one of the largest intact oak woodland forests in the Sierra foothills. PLT began the registration process for the voluntary carbon offsets market in 2010 and is still working on it. PLT received a grant from the Natural Resources Conservation Service’s Conservation Innovation Grant Program to hire a licensed forester to conduct the inventory, matched by its own staff time.

When it came time to create the 100-year carbon modeling that is needed to spin off financial projections for carbon offsets, PLT’s forester ran into trouble. There is a lack of data for growth rates and decay rates for western oaks because they are not as well studied as fast-growing commercial tree species. Another issue is that there is a conservation easement on the property. Easements must be within a year of the project start date—either before or after—which limits the time window for project development. That is not to say that a forest with an existing easement is ineligible. A forest carbon project could still work if the landowner

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<sup>11</sup> Experienced project developers suggest 1,000-3,000 acres are needed as the minimum acreage for a feasible forest project, depending on the type of trees and their ability to store carbon.

<sup>12</sup> According to Climate Action Reserve, land trusts involved in carbon offset forest projects include: Audubon Society, The Conservation Fund, Downeast Lakes Land Trust, New England Forestry Foundation, Pacific Forest Trust, Placer Land Trust, Redwood Forest Foundation, Sempervirens Fund and The Nature Conservancy.

agreed to tighten the restrictions in the easement to limit timber harvests and increase overall carbon stocks.

Jessica Daugherty, assistant director, is sanguine about PLT's experience thus far. "This project has focused attention on the importance of oak woodlands, a dominant landscape in California, as potential carbon sinks and the need to expand the forest protocols to include oak woodlands. Even if we don't get this project registered through this process, we have succeeded in enhancing the overall management of the forest and raising awareness about our work. We have also seen an increase in our standing within the region because of the innovative nature of trying to raise management funds by selling carbon offsets."

Not all the action is happening in California. Downeast Lakes Land Trust (DLLT) of Grand Lake Stream, Maine, is the owner of Farm Cove Project, one of only two forest carbon offsets projects included in ARB's inaugural listing of compliance offsets projects. Proceeds from the sale of these compliance offsets, expected to generate over \$2 million, will help finance the planned purchase of adjacent forestland.

Being one of the first forest projects to qualify for compliance offsets meant that DLLT had to be persistent. "The processes were literally being created by ARB as we went through them," says Mark Berry, executive director of DLLT. "It should be much easier now. We had a great partner in Finite Carbon who helped us through the registration process and is now helping us with carbon offsets marketing and sales."

### **Benefits and Risks to Landowners**

One of the major unknowns is what will happen to the price of carbon over the long term. Many expect the price to climb in 2015 as more entities come under ARB's regulations and are required to offset their emissions. Landowners are entering into 100+ year contracts for which they will have ongoing expenses of verification. For land trusts, with their perpetual commitment, this is not a problem, but it is worth considering carefully. It is impossible to predict whether future carbon offsets sales will cover these costs. It may be difficult to sell a property encumbered with such a contract if the price of carbon is not enough to cover the costs. It seems prudent for sellers of carbon offsets to retain a portion of their income to serve as an endowment to cover the long-term costs of monitoring, similar to the funds set aside for conservation easement monitoring.

In addition to costs, both upfront and ongoing, one should consider whether the long-term management goals for the forest are consistent with the requirement to create a net carbon sink. Tying a forest's management to the requirements of the carbon offsets market means committing to maintaining those gains for a very long time.

The Land Trust Alliance offers webinars and workshops at Rally for those wanting to learn more about carbon offsets markets and how to register a project. The websites of the project developers mentioned above are a wealth of information as are the websites for Climate Action Reserve and the California Air Resources Board.

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**Resources**

Pacific Forest Trust: <https://pacificforest.org/Forest-Carbon-Projects.html>

Air Resources Board: [www.arb.ca.gov](http://www.arb.ca.gov)

Climate Action Reserve: [www.climateactionreserve.org](http://www.climateactionreserve.org)

Ecotrust: [www.ecotrust.org/forests](http://www.ecotrust.org/forests)

Finite Carbon: [www.finitecarbon.com](http://www.finitecarbon.com)

LandVest: [www.landvestconsulting.com/energy\\_environmental\\_asset\\_group](http://www.landvestconsulting.com/energy_environmental_asset_group)

Forest Carbon Partners: [www.forestcarbonpartners.com](http://www.forestcarbonpartners.com)

Blue Source: [www.ghgworks.com](http://www.ghgworks.com)