**Mass Audubon promised to preserve wildlife. Then it made millions claiming it could cut down trees**

**By Lisa Song and James Temple** ProPublica and MIT Technology Review,Updated May 10, 2021, 3:31 p.m.

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A view of the Berkshires in western Massachusetts from Mount Greylock.BETH J. HARPAZ

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The Massachusetts Audubon Society has long managed its land in western Massachusetts as crucial wildlife habitat. Nature lovers flock to these forests to enjoy bird-watching and quiet hikes, with the occasional bobcat or moose sighting.

But in 2015, the conservation nonprofit presented California's top climate regulator with a startling scenario: It could heavily log 9,700 acres of its preserved forests over the next few years.

The group raised the possibility of chopping down hundreds of thousands of trees as part of its application to take part in California's forest offset program.

The state's Air Resources Board established the system to harness the ability of trees to absorb and store carbon to help the state meet its greenhouse gas reduction goals.

The program allows forest owners like Mass Audubon to earn so-called carbon credits for preserving trees. Each credit represents a ton of CO2. California polluters, such as oil companies, buy these credits so that they can emit more CO2

than they'd otherwise be allowed to under state law. Theoretically, the exchange should balance out emissions to prevent an overall increase in CO2 in the atmosphere.

The Air Resources Board accepted Mass Audubon's project into its program, requiring the nonprofit to preserve its forests over the next century instead of heavily logging them. The nonprofit received more than 600,000 credits in exchange for its promise. The vast majority were sold through intermediaries to oil and gas companies, records show. The group earned about $6 million from the sales, Mass Audubon regional scientist Tom Lautzenheiser said.

On paper, the deal was a success. The fossil fuel companies were able to emit more CO2 while abiding by California's climate laws. Mass Audubon earned enough money to acquire additional land for preservation, and to hire new staff working on climate change.

But it didn't work out as well for the climate, unless Mass Audubon actually intended to start acting more like a timber company. The project wouldn't achieve anywhere near the claimed levels of reduced carbon emissions if the nonprofit was getting credits for forests that were never in danger of aggressive logging. And every time a polluter uses a credit that didn't actually save a ton of carbon, net emissions go up, undermining the point of the program.

In order for California's system to work, carbon market experts say, the program must cause carbon savings that wouldn't have happened in the absence of the program. If Mass Audubon had already planned to preserve the forest, then the carbon credits program is paying to save trees that were never at risk.

The concept in question is known as "additionality." And how regulators create rules to ensure it happens is at the heart of the debate about whether California's carbon offset program is actually benefiting the environment.

To the Air Resources Board, the landowner's intent is not important. So long as the land could have been logged in a way that is legal, doesn't lose money, and doesn't exceed typical logging practices in that region, the agency's rules treat the savings to the atmosphere as real.

Some offset researchers argue that the state's approach allows landowners to claim credits for trees that were never in danger.

New research by the San Francisco nonprofit CarbonPlan provides evidence that this is occurring: It shows that landowners in the program routinely maximize the number of trees they assert they could chop down if they weren't given carbon credits, even if they have little history of logging or have mission statements in sharp opposition to such practices.

The research suggests the program could be significantly exaggerating the amount of carbon savings achieved.

"The nearly universal pattern we see in the data," said Danny Cullenward, policy director at CarbonPlan and a coauthor of the study, corroborates concerns that "those projects are not delivering real climate benefits."

That finding was one piece of a larger study that concluded the program issued tens of millions of carbon credits that don't achieve real climate benefits. As ProPublica and MIT Technology Review reported recently, those ghost credits were the result of oversimplified calculations of average carbon levels in forests.

The Air Resources Board defended the program and its approval of Mass Audubon's project.

The agency said the project met the agency's criteria for additionality. It would be "unrealistic and impractical" to develop rules that require regulators "to essentially read the mind of each project developer," said Dave Clegern, a spokesperson for the agency.

Clegern noted that environmental groups sued the Air Resources Board over its forest offset program in 2012. An appellate court ruled that the agency had reasonably interpreted the law in assessing additionality this way.

"We've litigated and won the right to define it as our program does, and implement it as we have," Clegern said. "Their study judges California's program by their standard which has no legal basis."

However improbable the idea might be of a conservation group actually permitting the removal of so much timber, Mass Audubon officials said they had simply followed the state's rules in claiming that the society could heavily log its forest.

Mass Audubon "would not have done this," Lautzenheiser said in an interview, "if we felt like the benefits to the atmosphere weren't real."

When asked whether the nonprofit intended to log to the levels laid out in the documents, Lautzenheiser did not directly answer.

"We don't agree with the premise of your question. We are confident that our project provides a net carbon benefit to the atmosphere because it meets all additionality requirements" of California's program, he said.

"Mass Audubon is participating in this program in good faith, has implemented a project meeting all relevant standards, and through the project has reinforced its commitment to the long-term stewardship of enrolled forestlands," Lautzenheiser said.

**Setting the floor**

By their nature, forest offset systems create incentives for landowners to exaggerate the amount of logging possible on their property. Landowners who assert they would have cut down all their trees can earn more credits and make more money than landowners who propose to cut down less of their forest.

Earlier offset programs sought to limit this by confirming what each project owner had genuinely intended to do. But it's nearly impossible to know what might have happened in the absence of the program, creating problems that led to significant overcrediting, according to earlier analyses.

California's Air Resources Board tried to address this problem with objective criteria, creating standards that all projects could be judged against in the same way.

The state's program prevents landowners from asserting that all of their trees are available for logging. Instead, it sets a floor based on how typical private landowners harvest their forests, using federal data on the average carbon levels stored in similar forest types in the region. Landowners must submit logging scenarios that, on average over a hundred years, do not fall below this floor.

CarbonPlan's research shows that landowners are submitting project applications that consistently approach the floor set by the Air Resources Board. It found that nearly 90% of the 65 projects analyzed cited future logging possibilities that fell less than 5% above the floor.

Mass Audubon's scenario was even closer, at 0.2%.

The state approved these projects even though it's highly unlikely that almost all the landowners were about to start chopping down their trees to carbon levels so close to the floor, Cullenward said.

In conducting the systemwide analysis of the program, CarbonPlan's researchers also noticed that conservation organizations like Mass Audubon were regularly participating in the program. They identified at least a dozen projects involving forests that wouldn't seem to be at risk of aggressive logging.

Clegern said the program's safeguards prevent the problems identified by CarbonPlan.

California's offsets are considered additional carbon reductions because the floor serves "as a conservative backstop," Clegern said. Without it, he explained, many landowners could have logged to even lower levels in the absence of offsets.

Clegern added that the agency's rules were adopted as a result of a lengthy process of debate and were upheld by the courts. A California Court of Appeal found the Air Resources Board had the discretion to use a standardized approach to evaluate whether projects were additional.

But the court did not make an independent determination about the effectiveness of the standard, and was "quite deferential to the agency's judgment," said Alice Kaswan, a law professor at the University of San Francisco School of Law, in an email.

California law requires the state's cap-and-trade regulations to ensure that emissions reductions are "real, permanent, quantifiable, verifiable" and "in addition to any other greenhouse gas emission reduction that otherwise would occur."

"If there's new scientific information that suggests serious questions about the integrity of offsets, then, arguably, CARB has an ongoing duty to consider that information and revise their protocols accordingly," Kaswan said. "The agency's obligation is to implement the law, and the law requires additionality."

**The recipe**

On an early spring day, Lautzenheiser, the Audubon scientist, brought a reporter to a forest protected by the offset project. The trees here were mainly tall white pines mixed with hemlocks, maples and oaks. Lautzenheiser is usually the only human in this part of the woods, where he spends hours looking for rare plants or surveying stream salamanders.

The nonprofit's planning documents acknowledge that the forests enrolled in California's program were protected long before they began generating offsets: "A majority of the project area has been conserved and designated as high conservation value forest for many years with deliberate management focused on long-term natural resource conservation values."

Lautzenheiser said there's no contradiction between active forest management and conservation, as Mass Audubon routinely logs some of its land to maintain crucial habitat.

Forests, wetlands and other ecosystems that store carbon are being destroyed every day, and "we simply have no chance" of meeting necessary climate targets without maintaining and restoring these lands, he said in an email. The world needs to scale up these types of "natural climate solutions," he said, and "we need them now."

When asked about Mass Audubon's logging scenario, he said the numbers were modeled by Finite Carbon, an offsets project developer that handled most of the technical work. There are legitimate discussions about how to set a floor, Lautzenheiser said, and the board settled on "a fair standard." Finite Carbon was just following "the recipe" laid out by the Air Resources Board, he said.

Finite Carbon, which oil giant BP acquired a majority stake in late last year, did not respond to specific questions about the project. In a statement, the company said all of its projects "have undergone review by the ARB as well as an independent, ARB-accredited auditor to ensure full compliance with Board protocols."

Energy company Phillips 66 bought 500,000 of the credits from Mass Audubon's project, while Shell and the Southern California Gas Company acquired another 140,000, according to the latest data from the board.

Researchers said the board must do a better job of evaluating whether projects are truly benefiting the climate.

Mark Trexler, a former offset project developer who spent decades studying additionality, said the Air Resources Board needs to scrutinize its projects to determine whether all the credits are truly additional and, if not, how many dubious credits were issued.

"Unless you have an answer to that question, you have no business implementing" a program, he said.

Barbara Haya, a coauthor of the CarbonPlan study, said the state's approach could work, but must be closely monitored.

If the approach leads to some projects with too many credits and others with too few, then the system should balance out, preventing additional emissions, said Haya, who leads the Berkeley Carbon Trading Project at the University of California, Berkeley.

“What matters is the quality of the credits as a whole, not every single individual credit,” she said.

The board, however, hasn’t provided this kind of assessment and doesn’t accept the premise that any of its credits might not be additional.

**Mortgaging the atmosphere**

Conservation groups stress that offset programs have helped to create financial incentives to protect forests, and have provided funding that some have used to purchase and preserve additional land that might otherwise have been logged.

John Nickerson, a consultant at Climate Action Reserve, a nonprofit that helped to develop California’s offset rules, said landowners face financial pressure to log or develop their land. The average forest owner holds on to their property for 20 years before selling it; without offsets, he noted, trees are only valued for their timber. “You take away this and we’re back to fighting timber wars,” he said.

“The risk for which projects are credited is real,” Nickerson said.

But even if some landowners are using the offsets proceeds to acquire more land, the carbon math still needs to balance out across the whole system to ensure it’s not producing more emissions than it’s preventing.

“I think what’s happening is a lot of these organizations are mortgaging the atmosphere to accomplish conservation goals,” said Grayson Badgley, a postdoctoral fellow at Black Rock Forest and Columbia University, and the lead researcher on the CarbonPlan study. “It’s totally true that they need money,” he said, and “they’ve convinced themselves that the only way they can get the money is through offsets.”

But, he continued, “by pretending they’re working, we’re locking ourselves in this Faustian bargain,” in which California achieves conservation goals at the cost of climate ones.

Other researchers have also spotted signs that credits might be going to projects that weren’t likely to be aggressively logged.

A 2016 paper pointed out that many of the early participants in California’s forest offset program were conservation nonprofits. Their carbon-rich forests were already well above the program’s floors and thus well-suited to earn a large number of credits.

While the state program may provide funds to these groups that could help them acquire new land, it’s not likely that the offsets were changing practices in the forests they enrolled, the study concluded.

“It is an additionality problem,” said Erin Kelly, an associate professor of forest policy and administration at Humboldt State University and lead author of the 2016 paper.

**‘Willful blindness’**

Industry insiders said landowners could theoretically log to levels far below the floor set by the board, so it’s no surprise that many submit proposals that maximize the amount of logging they could be doing.

“I’m sure that these sophisticated project developers set up their modeling systems to run iterations until they can accomplish just that,” Nickerson said with a laugh.

For a handful of projects, the documents state this outright, Badgley found. That includes one in Wisconsin where developer Bluesource wrote in its paperwork that it used software to model numerous logging levels for every acre of the project until it found a combination that produced carbon levels “equal” to the floor set by the board.

Emily Six, the marketing and communications manager for Bluesource, confirmed in an email that the company uses modeling and optimization software to arrive at these results. But she disputed that this exaggerates potential logging levels, noting that even if a landowner hadn't planned to log aggressively, "a spike in timber prices or mounting economic pressures" could change their minds "at any point over the 100-year project timeframe."

Trexler, the former project developer, said that line of reasoning is "absurd." The credibility of any logging plan depends on current conditions and intentions, not what *might* happen decades later, he said.

Trexler has despaired over what he called a "willful blindness" to this fundamental problem. Like an offsets Cassandra, he's repeatedly issued warnings on how false savings threaten the integrity of offsets everywhere.

Without better assurances that credits represent carbon savings that wouldn't have happened otherwise, "all we're doing is creating a massive market for creative accounting," he said.

Years ago, Trexler proposed a scoring system to distinguish high-quality offsets — those with a high likelihood of achieving real climate benefits — from lower-quality projects, to improve transparency in the carbon market. But the concept never took off, he said. He no longer works on offset programs.

"I've sort of checked out," he said. "I've simply concluded we're never going to do it well."

**How We Got the Story**

ProPublica and MIT Technology Review decided to collaborate on this project because of our respective track records of reporting on carbon offsets. In 2019, ProPublica reporter Lisa Song wrote about problems with international forest offsets and California's cap-and-trade program. Separately, Technology Review editor James Temple spent much of 2019 and 2020 reporting on the promises and challenges of carbon removal efforts, including the Air Resources Board's compliance carbon offset program. Both Song and Temple had independently interviewed several co-authors of the CarbonPlan report for their respective stories.

In late 2020, when CarbonPlan was partway through its analysis, study co-author Danny Cullenward pitched the study as a story to Technology Review. Temple then contacted Song to discuss a reporting partnership. We decided that such a complex, technical story would benefit from a newsroom collaboration.

Cullenward, a lecturer at Stanford Law School and CarbonPlan's policy director, had studied California's climate policy system for years. In 2019, Cullenward and ecologist Grayson Badgley, his former colleague from the Carnegie Institution for Science, decided to analyze the state's offset program in a comprehensive way after attending a workshop where they learned more about how the program's rules were designed. (Cullenward is also vice-chair of the Independent Emissions Market Advisory Committee, a group of experts convened by the California Environmental Protection Agency to advise the Air Resources Board on cap and trade. Cullenward said his work at CarbonPlan doesn't speak for the committee.)

In early 2020, Cullenward joined the startup CarbonPlan. The nonprofit assesses the scientific integrity of carbon removal efforts. That includes various types of carbon offsets, as well as emerging technologies that remove CO2 from the air. CarbonPlan receives project-specific funding from companies and other organizations. For instance, Stripe paid CarbonPlan to evaluate different carbon removal options.

Microsoft also paid CarbonPlan to study how climate change would affect the ability of forests to mitigate global warming. CarbonPlan used part of that funding to digitize the forest carbon offset project documents in California's program. Badgley, a postdoctoral fellow at Black Rock Forest and Columbia University, digitized those records and was paid as a consultant by CarbonPlan.

CarbonPlan then used separate unrestricted funding (from various individuals and foundations) to study those projects, working with Badgley and other scientists including Barbara Haya, who leads the Berkeley Carbon Trading Project at UC-Berkeley.

Its study is focused on the primary form of forest offsets in California's program, called Improved Forest Management. These IFM projects reward landowners for managing their forests in ways that prevent further emissions or absorb more carbon over time.

In part because the study hadn't been submitted to a scientific journal, which would include a formal peer review process, we took added steps to check its quality. First, we did a gut check and interviewed several forest experts to confirm the report's basic premise. Weeks later, when CarbonPlan completed a draft, we sent it to several outside scientists for a detailed review, including Heather Lynch, Professor of Ecology & Evolution at Stony Brook University, and a member of ProPublica's data advisory board; Dan Sanchez, who directs the Carbon Removal Laboratory at UC-Berkeley; and David Valentine, Chair of the Department of Natural Resources and Environment at the University of Alaska-Fairbanks.

These scientists are all experts on forests, climate change, the carbon cycle and/or carbon removal. They all have at least a general understanding of California's offsets, but do not work for offset developers.

We also sent the study to a fourth scientist, Hunter Stanke, a Ph.D. student in the School of Environmental and Forest Sciences at the University of Washington. Stanke developed the rFIA software that CarbonPlan used in its analysis. The software analyzes raw data from the Forest Service's Forest Inventory and Analysis Program, often used by academics, government agencies and timber companies for purposes unrelated to offsets. Before the newsrooms sent Stanke the study, he had provided technical assistance on rFIA to the lead author of the CarbonPlan study, but he wasn't aware CarbonPlan was using the software to study offsets.

All four scientists praised the study and its methodology. They asked for clarification on several technical details, which we sent to CarbonPlan. The nonprofit incorporated some minor suggestions into its final draft, but said the changes didn't alter the overall findings.

When we published the first story in this series, CarbonPlan posted the study on its website, along with all of its methodology and code and the raw, digitized files of all the carbon offset project documents. CarbonPlan has also submitted the study for publication in a research journal.

Doris Burke contributed reporting.

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