



How Forest Carbon Programs Work: Two Case Studies

There are several programs that buy carbon stored in forests. They require different management compared to standard forestry. This article explores the experience of two landowners in these programs.

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The start of fall (Photo credit: Calvin Norman)

With millions of acres of forest, good soil, excellent growing conditions, and a long history of forest management, Pennsylvania is rapidly becoming the focus of projects dedicated to increase the carbon stored in forests. Several programs already exist and have enrolled thousands of acres of forests. These

programs pay forest landowners to sequester carbon. However, these programs require long-term contracts and may change the way land is managed. To better understand what its like to enroll in a carbon program, let's take a look at the experience of two different landowners.

Case Study 1: Hiawatha Hunting and Fishing Club

The Hiawatha Hunting and Fishing Club is a private club in eastern Pennsylvania. The club has 43 members who are all passionate about hunting, fishing, and

enjoying their 1,305 acres. Historically, the club has actively managed their forest to keep it healthy and encourage healthy wildlife populations. As part of their management, the club has worked to remove invasive species, improved wildlife habitat, and planted native plants. To pay the taxes on the forest and cover the cost of improvements to wildlife habitat, they have gotten grants, conducted sustainable timber harvests, and collected yearly dues.

To ensure the land they love did not become a housing development, club members began exploring the idea of creating a conservation agreement that would ensure the forest is preserved forever. To that, the club began discussions with The Nature Conservancy (TNC). There were some club members who had concerns about signing an agreement that would lock the land up forever, so the Club and TNC began to negotiate a deal. These negotiations took three years, but eventually they came to an arrangement they were both satisfied with.

The Club signed a conservation easement that ensured the forest would remain forest forever and guaranteed that the Club would get at least \$250,000 from TNC's carbon program, Working Woodlands. This program measures the increased amount of carbon in the forest because of the project and then sells that increase through a carbon credit. The Club gets the profits from those sales. Occasionally, carbon sales have been lower than expected, so TNC makes up for it by conducting valuable management services like spraying ferns that can prevent seedlings from growing. Not only is the Club making money from the carbon market, but it also continues to harvest timber—based on its forest management plan—and pursue grants. The Club keeps all the profits from timber harvesting and related endeavors. According to Ken Huhn, a member, the members are very happy with the current state of things, and they mostly forgot why they were opposed to the easement and carbon program.

Being the first private landowners, joining the program was not without its hurdles. At first, their management was audited annually. This required a lot of time from club members. After letting TNC know about their frustration, TNC was able to make some changes in the auditing procedure and now auditing takes up very little time.

Looking back on his experience with the program, Ken said that he would recommend the program to others who were interested in conservation.

Case Study 2: Bethlehem Authority

The Bethlehem Authority is responsible for managing approximately 22,000 acres of land in the Poconos and two reservoirs to provide 10 billion gallons of clean water to the residents of Bethlehem. The Authority has been managing their forest for decades with a professional forester.

In 2010, they were approached by The Nature Conservancy (TNC) about entering a conservation easement and joining their carbon sequestration project, Working Woodlands. The goals of the project were to maintain or improve the watershed to ensure clean water for the Authority, ensure the forests provided a long-term financial return, promote ecosystem health, and give recreational opportunities to the public. To ensure all these goals were met, TNC and the Authority developed a Forest Stewardship Council® (FSC® C008922) approved forest management plan. Negotiating the easement and developing the plan took a year and a half, as the contracts and agreements had to go through several long public comment periods and voting by the Board. The easement was a 60-year agreement that ensures the land will remain forested but also allows the Authority to build a wind energy project and actively manage the forest. In 2011, the conservation easement was signed, and the first carbon surveys took place. These surveys were conducted by TNC at no cost to the Authority.

The first sale took place in 2013. So far, the project has netted the Authority almost 1.2 million dollars, and this does not include income from sustainable timber harvests. These profits help the Authority pay for consulting fees, staff salaries, and some goes back to the municipality to fund capital improvement projects. While there were some concerns about signing a 60-year contract, the municipality and the Authority are very happy with the easement and the contract, according to the Executive Director Stephen Repasch.

The project is not without a few hiccups, one year the Authority harvested several sites that had permanent plots on them where carbon was measured. This greatly reduced the amount of carbon the Authority could sell that year. While they did not earn as much as they expect that year from carbon sales, the Authority learned how the carbon market model worked and the importance of paying attention to how many plots are harvested in a single year. Additionally, being a part of the carbon market and having an FSC certified management plan means

that there is annual surveying and auditing. The audits and surveys take a good bit of time, but Repasch feels this time is well invested.

Repasch said about the project, "If you're forward-thinking and environmental-focused this is a good project. There have been a few hiccups in understanding the model. [Initially,] (t)here were a few reservations, but now we've really settled into it. It pays for the effort and doing what's right."

Lessons Learned

The sale of forest carbon can give landowners another source of income. Importantly, the income from carbon sales can occur annually (depending on the market and program), where timber harvesting may only occur a few times in an owner's lifetime. These programs are not for everyone, however. The Working Woodlands program requires at least 2,000 acres of land and the signing of a long-term contract. There are programs available for smaller landowners, but they still require at least 30 acres of forest. Agreements also run for at least 20 years in these programs. Joining a carbon market also takes an investment of time, as owners need to negotiate a contract specific to them. Carbon markets may also change the way land is managed. These programs require that land is managed sustainably, so a sustainable forest management plan is required, and some unsustainable management practices are not allowed. Before signing up for a carbon market, it is important that landowners think about the goals they have for their land, and make sure these programs are aligned with those goals.