

What makes our carbon offsets “additional”?

NCX uses a fine-scale, dynamic approach to verify real climate impact.

Overview →

To reduce the amount of carbon in the atmosphere, carbon offsets must provide a quantifiable benefit to the climate that would not have happened without their intervention. This is what climate experts call *additionality*. Proving additionality can be challenging, because it involves making predictions about the future – both with and without the carbon project. To know if carbon storage is additional, you need to know what would have happened on the ground in the absence of any carbon program – on a specific property, for a specific type of forest, in a specific market area. NCX has developed the science and technology tools to meet a high standard of additionality, setting us apart from legacy carbon offset programs.

Many traditional forest offset programs rely on a coarse, static approach to establishing additionality, where a single “common practice” baseline is applied to all forests within a very large region – often tens of thousands of square miles. This approach has come under scrutiny because it ignores the natural variability of forests including different species, growth rates, and the amount of carbon that forests can store. As a result, the traditional baseline risks grossly overestimating the amount of additional carbon generated by an offset project. Corporate buyers can end up paying for carbon credits that don’t actually create their full expected climate benefit.

At NCX, we’ve adopted a fine-scale, dynamic approach to additionality where we base our carbon credits on detailed, data-driven, acre-by-acre forest analysis. This approach better captures the variability in carbon content across the landscape. Over time, the results are a more accurate and trustworthy estimate of additionality. Learn more in [our baseline model of harvesting behavior](#).

A dynamic approach to additionality

How does deferring harvests, the method NCX uses to generate carbon credits, create additionality? These projects presume that without revenue from carbon credits landowners would harvest and sell timber from their property. Harvesting trees causes both a loss of carbon to the atmosphere relative to the starting condition and a reduction in that forest’s future ability to sequester additional carbon. Deferring a harvest, by contrast, will increase the forest’s ability to remove carbon from the atmosphere, thus increasing the overall amount of carbon stored relative to its starting condition.

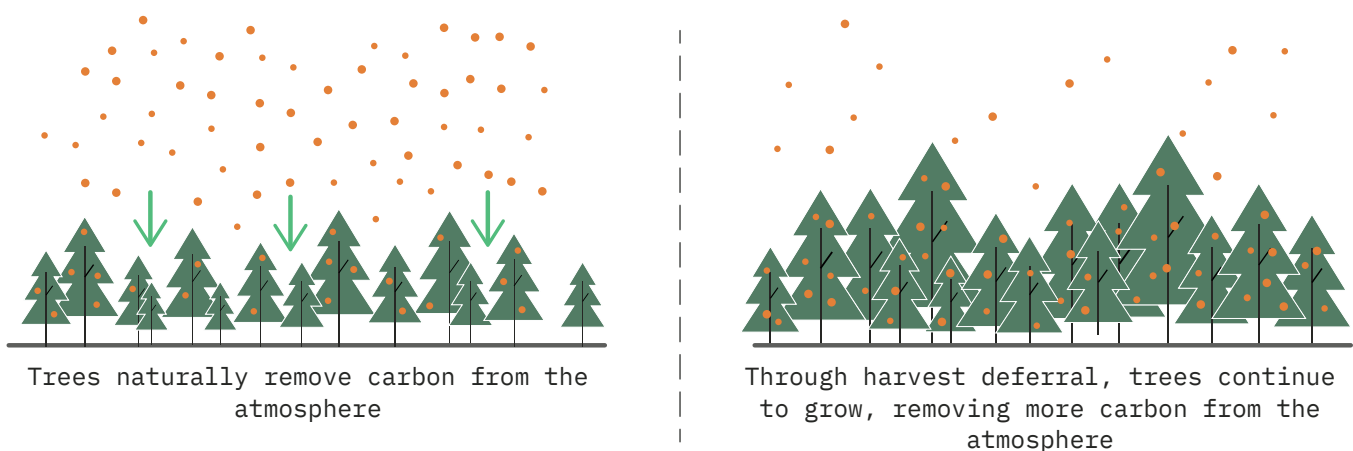
In the NCX program, hundreds or thousands of landowners may defer harvests across a large portfolio of projects. Collectively, these forests grow older and store more carbon than would have been possible without the deferred harvests – on a landscape scale. Individual landowner properties will vary in how much carbon they start with and how much they can sequester over time depending on the species and sizes of trees, the local climate, and other biogeographical factors.

Legacy carbon projects that use a static approach to additionality apply the same baseline assumptions to all forests across very large regions, regardless of the underlying conditions. By contrast, the NCX dynamic approach creates an individualized, acre-level baseline for every enrolled property, every year.

To account for natural variation in the forest itself, we rely on our [Basemap technology](#): an acre-by-acre assessment of tree species and size, updated every year. We then combine these data with our baseline harvest probability model to generate an estimate of carbon at risk of harvest. This approach accounts for the high variability that exists between different forests, both for existing carbon stocks and their risk of being harvested.

Using such fine scale baselines mitigates the risk of over or under crediting landowners for the harvests they defer. Our approach leads to conservative estimates of additionality. Because we re-evaluate these baselines on every acre, every year, we regularly generate new data that can refine our models even further. The NCX data-driven approach to additionality produces carbon offsets that have real, quantifiable climate impact at scale. Learn more about landowner participation in the Natural Capital Exchange by reading about [the NCX carbon program](#).

FIGURE 1: **Additionality of harvest deferral projects**



For more details see: [NCX Carbon Guide](#) | [Webinar: Additionality in Forest Carbon](#)