

# Forest Restoration v. Reforestation

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## FOREST RESTORATION V. REFORESTATION DWELLERS TO FIGHT CLIMATE CHANGE

→ What's the difference between reforestation and forest restoration? It's an important question when it comes to offsetting because of the carbon accounting of the two different processes. Reforestation as a means of offsetting raises objections because clearing an area for replanting can release significant amounts of carbon. Forest restoration, on the other hand, requires only minimal disturbance of the land, and hence little carbon release, therefore so overcoming this problem.

Take the Pacific North West of North America where forests have been heavily logged. Gone in many areas is the majestic Sitka spruce, Douglas fir, western red cedar, western hemlock and poplar that graced the landscape. In many places the forest has failed to regenerate and what is left are denuded tracts scattered with debris and invasive species.

Some of these species may be so-called pioneer trees, primarily alder in riparian areas. In the natural order, these take hold first, creating the preconditions for the climax species – the spruce, Douglas fir, etc. - to re-establish themselves. But Nature's lead times are long, and it can take tens, if not hundreds of years for the forest to reclaim the landscape.

Meanwhile, non-native species, such as Himalayan blackberry and English ivy, seize their opportunity, rapidly spreading to choke the land and delay or undermine the regeneration process. Furthermore, pioneer species such as alder tend to be shallow rooting, and don't hold the soil like the deeper rooting climax trees. This is a particular problem on slopes, and in areas adjacent to urban sprawl where rainwater run-off is intensified by housing and roads.

Conventional reforestation would go in and clear the land, uprooting the pioneer trees and invasive species. This disturbance of the soil can release significant amounts of carbon. Over time, the new tree growth will reabsorb this, but delays the point at which the new forest is the net consumer of carbon.

As long as the carbon released by clearing is properly accounted for, and the time to reach net carbon positive is transparent and acceptable, reforestation is an appropriate mechanism for offsetting. However, given the right circumstances, there is a way to reach the goal of net carbon positive sooner.

Forest restoration is a more like keyhole surgery. Instead of wholesale clearing and replanting, it makes small incisions in the landscape, reordering the balance of plant life, and giving the new forest a head start.

Only enough undergrowth is cleared to allow for the planting around the alders of indigenous climax species, such as the Sitka spruce and Douglas fir. This is done in

small, mixed species clusters to mimic natural stands. These trees are then protected and nurtured during their early growth, up to five years, until they get established. As they grow, these trees shade out the pioneers and the brush, taking over and eventually re-establishing native forests.

This process accelerates the healing of the land with the minimum of scar tissue and associated release of carbon. It is an approach that is being used in the restoration of the riparian forests of the Maple Ridge area of British Columbia, and is a model that can address at least one of the objections to offsetting with trees.

## ABOUT ZEROFOOTPRINT

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