

Addressing the Climate Crisis, Worldwide Reforestation and Industrial Hemp

The Cheapest Way to Save the Planet Grows Like a Weed

By [Ellen Brown](#)

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*Planting billions of trees across the world is by far the cheapest and most efficient way to tackle the climate crisis. So states [a July 4 article in The Guardian](#), citing a new analysis published in the journal *Science*. The author explains:*

As trees grow, they absorb and store the carbon dioxide emissions that are driving global heating. New research estimates that a worldwide planting programme could remove two-thirds of all the emissions that have been pumped into the atmosphere by human activities, a figure the scientists describe as “mind-blowing”.

For skeptics who reject the global warming thesis, reforestation also addresses the critical problems of mass species extinction and environmental pollution, which are well documented. [A 2012 study from the University of Michigan](#) found that loss of biodiversity impacts ecosystems as much as climate change and pollution. Forests shelter plant and animal life in their diverse forms, and [trees remove air pollution](#) by the interception of particulate matter on plant surfaces and the absorption of gaseous pollutants through the leaves.

The July analytical review in *Science* calculated how many additional trees could be planted globally without encroaching on crop land or urban areas. It found that there are 1.7 billion hectares (4.2 billion acres) of treeless land on which 1.2 trillion native tree saplings would naturally grow. Using the most efficient methods, 1 trillion trees could be restored for as little as \$300 billion – less than 2 percent of the lower range of [estimates for the Green New Deal](#) introduced by progressive Democrats in February 2019.

The Guardian quoted Prof. Tom Crowther at the Swiss university ETH Zürich, who said,

“What blows my mind is the scale. I thought restoration would be in the top 10, but it is overwhelmingly more powerful than all of the other climate change solutions proposed.”

He said it was also by far the cheapest solution that has ever been proposed. The chief drawback of reforestation as a solution to the climate crisis, per *The Guardian*, is that trees grow slowly. The projected restoration could take 50 to 100 years to reach its full carbon sequestering potential.

A Faster, More Efficient Solution

Fortunately, as of December 2018 there is now a cheaper, faster and more efficient alternative – one that was suppressed for nearly a century but was legalized on a national scale when President Trump signed the Agriculture Improvement Act of 2018. This is the widespread cultivation of industrial hemp, the non-intoxicating form of cannabis grown for fiber, cloth, oil, food and other purposes. Hemp grows to 13 feet in 100 days, making it [one of the fastest CO2-to-biomass conversion tools](#) available. Industrial hemp has been proven to absorb more CO2 per hectare than any forest or commercial crop, making it the ideal carbon sink. It can be grown on a wide scale on nutrient poor soils with very small amounts of water and no fertilizers.

Hemp products can promote biodiversity and reverse environmental pollution by replacing petrochemical-based plastics, which are now being dumped into the ocean at the rate of one garbage truck per minute. [One million seabirds die](#) each year from ingesting plastic, and up to 90 percent have plastic in their guts. Microplastic (resulting from the breakdown of larger pieces by sunlight and waves) and microbeads (used in body washes and facial cleansers) have been called the ocean's smog. They absorb toxins in the water, enter the food chain, and ultimately wind up in humans. To avoid all that, we can use plastic made from hemp, which is biodegradable and non-toxic.

Other environmental toxins come from the textile industry, which is [second only to agriculture](#) in the amount of pollution it creates and the voluminous amounts of water it uses. Hemp can be grown with minimal water, and hemp fabrics can be made without the use of toxic chemicals.

Environmental pollution from the burning of fossil fuels can also be reversed with hemp, which is more efficient and environmentally friendly even than wheat and corn as [a clean-burning biofuel](#).

Hemp cultivation also encourages biodiversity in the soil, by regenerating farmland that has long been depleted from the use of toxic chemicals. It is a “weed” and grows like one, ubiquitously, beating out other plants without pesticides or herbicides; and its long tap root [holds the soil](#), channeling moisture deeper into it. Unlike most forestry projects, hemp can be grown on existing agricultural land and included as part of a farm's crop rotation, with positive effects on the yields and the profits from subsequent crops.

A Self-funding Solution

Hemp cultivation is profitable in many other ways – so profitable that it is effectively a self-funding solution to the environmental crisis. According to an April 2019 article in *Forbes* titled “[Industrial Hemp Is the Answer to Petrochemical Dependency](#),” crop yields from hemp can range from \$20,000 to \$50,000 per acre. Its widespread cultivation can happen without government subsidies. Investment in research, development and incentives would speed the process, but market forces will propel these transformations even if Congress fails to act. All farmers need for incentive is a market for the products, which hemp legalization has provided. Due to the crop's century-long suppression, the infrastructure to capitalize on its diverse uses still needs to be developed, but the infrastructure should come with the newly opened markets.

Hemp can break our dependency on petrochemicals not only for fuel but for plastics,

textiles, construction materials and much more. It has actually been grown for industrial and medicinal purposes for millennia, and today it is legally grown for industrial use in hundreds of countries outside the US. Before the US ban, a [1938 article in Popular Mechanics](#) claimed it was a billion-dollar crop (the equivalent of about \$16 billion today), useful in 25,000 products ranging from dynamite to cellophane. [New uses](#) continue to be found, including eliminating smog from fuels, creating a cleaner energy source that can replace nuclear power, removing radioactive water from the soil, and providing a very nutritious food source for humans and animals. Cannabidiol (CBD), a non-psychoactive derivative of hemp, has recently been shown to [help curb opioid addiction](#), now a national epidemic.

Hemp can also help save our shrinking forests by eliminating the need to clear-cut them for paper pulp. According to the USDA, one acre planted in hemp produces as much pulp as 4.1 acres of trees; and unlike trees, hemp can be harvested two or three times a year. Hemp paper is also finer, stronger and lasts longer than wood-based paper. Benjamin Franklin's paper mill used hemp. Until 1883, it was [one of the largest agricultural crops](#) (some say the largest), and [80 to 90% of all paper](#) in the world was made from it. It was also the material from which most fabric, soap, fuel and fiber were made; and it was an essential resource for any country with a shipping industry, since sails were made from it. In early America, growing hemp was considered so important that it was illegal for farmers *not* to grow it. [Hemp was legal tender](#) from 1631 until the early 1800s, and taxes could even be paid with it.

Banned by the Competition?

The competitive threat to other industries of this supremely useful plant may have been a chief driver of its apparently groundless criminalization in the 1930s. Hemp is not marijuana and is so low in psychoactive components that it cannot produce a marijuana "high." It was banned for nearly a century simply because it was in the same plant species as marijuana. Cannabis came under attack in the 1930s in all its forms. Why? [Hemp competed](#) not only with the lumber industry but with the oil industry, the cotton industry, the petrochemical industry and the pharmaceutical industry. Many have speculated that it was suppressed by these powerful competitors.

William Randolph Hearst, the newspaper mogul, owned vast tracts of forest land, which he intended to use for making wood-pulp paper. Cheap hemp-based paper would make his forest investments a major money loser. Hearst was a master of "yellow journalism," and a favorite target of his editorials was "reefer madness." [He was allied](#) with the DuPont Corporation, which provided the chemicals to bleach and process the wood pulp used in the paper-making process. DuPont was also ready to introduce petroleum-based fibers such as nylon, and hemp fabrics competed with that new market.

In fact hemp products threatened the whole petroleum industry. Henry Ford first [designed his cars](#) to run on alcohol from biofuels, but the criminalization of both alcohol and hemp forced him to switch to the dirtier, less efficient fossil fuels that dominate the industry today. A biofuel-based infrastructure would create [a completely decentralized power grid](#), eliminating the giant monopolistic power companies. Communities could provide their own energy using easily renewable plants.

None of this is new news. Hemp historians have been writing about hemp's myriad uses and its senseless prohibition for decades. (See e.g. [The Emperor Wears No Clothes](#) by Jack Herer, 1992; [Hemp for Victory: A Global Warming Solution](#) by Richard Davis, 2009.) What is news is

that hemp cultivation is finally legal across the country. The time is short to save the planet and its vanishing diversity of species. Rather than engaging in endless debates over carbon taxes and Silicon Valley-style technological fixes, we need to be regenerating our soils, our forests and our oceans with nature's own plant solutions.

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Ellen Brown chairs the [Public Banking Institute](https://www.publicbankinginstitute.org) and has written thirteen books, including her latest, [Banking on the People: Democratizing Money in the Digital Age](https://www.ellenbrown.com/book-detail.php?f=9781933392868). She also co-hosts a radio program on PRN.FM called "[It's Our Money](https://www.ellenbrown.com/shows/its-our-money)." Her 300+ blog articles are posted at [EllenBrown.com](https://www.ellenbrown.com). She is a frequent contributor to Global Research.

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