



US Biochar Initiative Newsletter

August-September 2022

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Building the Biochar Industry

by Tom Miles, Executive Director

In this newsletter, Wilson Biochar's **Kelpie Wilson**, introduces "Biochar Fixes Carbon" - a mechanical analogy and play on words that articulates the benefits of biochar. Don't miss this read!



Last month's North American Biochar and Bioenergy Conference was a great success! We saw biochar producers who were inspired by working together to explore new markets in asphalt and other applications. Many thanks to our hosts at West Virginia University, our sponsors, and the more than 350 participants. It was great to see the positive commercial spirit of the biochar community.

Special thanks to our sponsors from **Carbon Future** and the other participants representing carbon markets that have given a real boost to biochar production. USBI has been discussing the costs and benefits of a North American carbon protocol to facilitate market entry by North American producers.

Paul Stuart, who was at the conference, has offered to host a US Pavilion with five or six North American companies at his conference, **Bio360 Expo**, in Nantes, France, February 8-9, 2023. It is a major European bioenergy conference and biochar representation is strong. There will be pavilions for Europe, Australia-New Zealand (ANZBIG), and others. If you want to participate, contact us at usbiochar@gmail.com.

Congratulations to High Plains Biochar's **Rowdy Yeatts** and his Climate-Smart Specialty Grains and Oilseeds team in Wyoming for receiving a USDA Climate Smart Commodities grant. Seventy awards were made from hundreds of applications including many biochar projects. **USBI** will provide education and outreach on a project to Transition the U.S. Beef Supply Chain to Carbon Neutral.

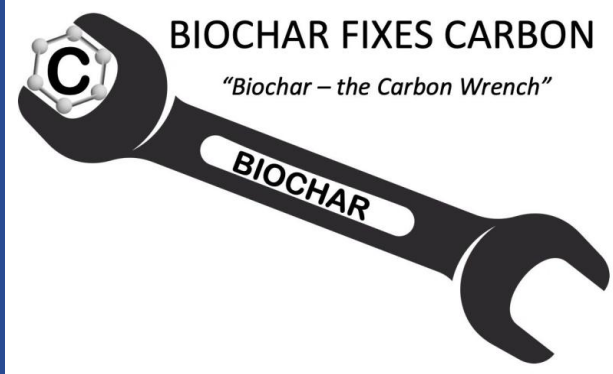
We hope that the recently proposed Biochar Research Network Act will help expand biochar adoption in agriculture. The legislation has been introduced by Senators Chuck Grassley, R-Iowa; John Thune, R-S.D.; Sherrod Brown, D-Ohio; and Jon Tester, D-Mont. Companion legislation was introduced by Rep. Mariannette Miller-Meeks, R-Iowa in July.

USBI and the University of Nebraska - Lincoln have now published three factsheets to help promote biochar in compost, stormwater, and carbon markets. Other factsheets are in process. We hope to expand the production of guidance documents for specific crops and applications. The compost factsheet can be found on the [USBI website here](#).

At the Society of American Foresters conference, USBI presented a session on the use of biochar in urban forestry. In October, we will discuss carbonization of biosolids at the Water Environment Federation Technical Exhibition and Conference (WEFTEC) in New Orleans. Glanris LLC will exhibit biochar-based water filtration products at the conference.

Would you like to volunteer to help USBI continue supporting the development of biochar production and use? Our volunteers play an important role in growing the industry! [*Let us know if you're interested.*](#)

We appreciate the support of the US Forest Service and the US Endowment for Forestry and Communities and look forward to increased participation from the biochar industry.



by Kelpie Wilson
Wilson Biochar Associates

Those of us who have been involved in the biochar industry for many years now often wonder if there is a better way to talk about biochar and explain it to people who are new to it.

Biochar can be a very confusing topic. What exactly is it? Is it just charcoal, or is it a particular kind of charcoal, or is it charcoal that has been specially prepared in some way? What is biochar good for? Do you need to have different kinds of biochar for different uses? Etc, etc, etc.

"Biochar Fixes Carbon" is a new way to talk about biochar without getting caught up in definitions and details that fail to capture the essence of biochar. Aside from material definitions of this highly variable substance, we need to recognize that biochar is not just a noun. It is also a verb. In other words, it is a process. I often talk about "biocharring" a waste material. This is about more than just a manufacturing process to make a product. It is also about an alteration in the energy and material fluxes of the environment and the planetary energy and carbon balances.

The world has many problems seeking solutions. In current discussions, many of these problems are subsumed under the "climate" framework. In this framework, we primarily have a "carbon" problem. However, carbon is not a pollutant. After all, we are carbon-based life forms and utilize carbon for our survival. In the process, we have transferred too much carbon from the living biosphere, including soil, to the atmosphere. We have also transferred formerly fixed carbon as fossil carbon to the atmosphere.

Normal ecosystem processes, without human intervention, tend to fix carbon from the atmosphere into terrestrial resources. As humans, when we make and use biochar, we are helping Nature fix carbon. We also build up carbon in the biosphere as a resource for our own use.

I propose we adopt a new slogan to explain and market biochar processes and products to the public and policy makers -

BIOCHAR FIXES CARBON

The world has a carbon problem. Some places (the atmosphere) have too much of it. Other places (soil and farmland) have too little. Biochar can fix the carbon cycle in a way that benefits people and nature. It fixes carbon by taking it out of the atmosphere and putting it into soil and products for human use.

Fixing carbon has another meaning too: pyrolysis transforms organic carbon that plants create into what we call "fixed" carbon. In this sense, fixed means that it will not degrade very easily. The organic carbon is now in a mineral form of fused carbon rings that microbes cannot easily break apart and consume. This is how biochar fixes climate, by preventing the microbes from turning solid carbon back to CO₂ gas.

Biochar fixes climate, and it also solves many other problems **that are both related and unrelated to climate:**

- Biochar fixes **drought conditions** by holding water in soil
- Biochar fixes **fertilizer shortages** by holding nutrients in soil
- Biochar fixes **dead soil** by improving conditions for beneficial soil microbes
- Biochar fixes **smelly manure and compost** by supporting good microbes, balancing C:N and retaining nutrients
- Biochar fixes **polluted soil** by immobilizing heavy metals and other contaminants
- Biochar fixes **flooding** by improving rainwater infiltration
- Biochar fixes **eutrophication** by absorbing nitrogen in water bodies
- Biochar fixes **drinking water** by filtering out contaminants
- Biochar fixes **building material impacts** when used as a substitute for resource-intensive components of asphalt, concrete and other building materials
- Biochar fixes **human health** and well-being as an ingredient in health and beauty products and for management of human sanitation
- Biochar fixes **animal health** when used as an animal feed supplement and for manure management and sanitation
- Biochar fixes **forest fires** by converting excess fuel loads to water-holding soil

The biochar industry has been focused on biochar as a product and the uses are all over the map, which makes it hard to talk about it in a unifying way. Perhaps we can make more headway by thinking in terms of actions. Biochar fixes things. It fixes our climate problem. It fixes a variety of other environmental and health problems.

Biochar is revolutionary. That's why so many of us have stuck with this for so long, even though our progress feels abysmally slow at times. We have to think bigger than just selling products. We have to think about transforming our relationship to carbon.

Biochar as a verb has a new definition - To biochar is to fix carbon drawn from the atmosphere through plant photosynthesis into long-lived forms of carbon that are useful for fixing many environmental problems in the biosphere of Planet Earth.

Finally, a point I like to make in my workshops - our biggest problem is not too much carbon in the atmosphere, it is not enough carbon in our soils, forests, grasslands and farms. The problem is the solution.

BIOCHAR FIXES CARBON!

BIOCHAR EVENTS CALENDAR

Oct 24-26 Sustainable Energy for a Sustainable Future, San Jose, Costa Rica, third in a series. This ASABE (American Society of Agricultural and Biological Engineers) Global Initiative Conference will promote interdisciplinary dialogues and present regional energy innovations with a global perspective. [More details are available here.](#)

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KEEP YOUR USBI NEWSLETTER FREE!

If you attended the North American Biochar and Bioenergy Conference August 8-10, you probably saw many of our devoted volunteers working behind the scenes making sure this fantastic event went as planned! Please show your appreciation by making a generous gift this month!



GIVE GENEROUSLY



USBI LEARNING CENTER

Carbon Farming - A Climate Solution Under Our Feet

In this 48-minute film from NHK World Japan, learn how carbon farmers Gabe Brown in the US, Toshimichi Yoshida in Japan, and others are taking action against the climate crisis by employing regenerative agriculture or carbon farming.

2022 Field Guide to Biochar Water Treatment Learn how biochar draws dissolved synthetic chemical contaminants into fine micro-pores where they adsorb onto the biochar surface.

BIOCHAR NEWSLINKS

➤ **Verra Publishes VCS Biochar Methodology** Global Verra has released a methodology that sets out procedures for quantifying greenhouse gas (GHG) emission reductions from producing biochar and using it in approved soil and non-soil applications. Verra will host two one-hour webinars to launch the

methodology in September.

➤ **Biochar's Potential to Help Sequester Carbon Is**

Incredible says Iowa US Representative Mariannette Miller-Meeks. “We must promote this innovative, agricultural tool...”, she exclaimed as she introduced the bipartisan 2022 Biochar Research Network Act. This bill would create a National Biochar Research Network where biochar can be further researched and tested.



➤ **C6 Eyes Site Near Leavenworth for Biochar Production.**

Washington's C6 Forest to Farm has found what it says is an ideal processing site to sort forest materials for different products. Small-diameter trees could be used for higher-value products such as flooring or furniture. C6 is hoping to produce the latter through partnerships with other processors. Tree tops from larger trees cut for commercial timber and logging slash would be turned into biochar and added to compost.

« Materials like logging slash and small branches would be converted to biochar. *Photo by Marcy Stamper*

➤ **Climate Sanctuary Values Biochar from Human Waste.**

The Sweet Farm climate sanctuary in New York worked with a company called Bioforcetech to create biochar from human waste that they obtained from a wastewater treatment plant. They want to bring the use of biochar to the finger lakes region but are still working out some of the details.

Flowers begin to grow at Sweet Farm. (*photo by Emily Kenny/Spectrum News 1*) »



➤ **Haliburton Forest Biochar Announces \$10 Million Expansion**

Canada's Haliburton Forest Biochar (HFB) is bringing 20 new jobs and a product that can be used to help fight climate change to Haliburton. A portion of the funding for the expansion is coming from Natural Resources Canada's Investments in Forest Industry Transformation (IFIT) program and the rest of the funding is an investment by HFB.

« Heated to 400 degrees Celsius, these wood chips are formed into a product that is 90 per cent carbon.

➤ **City of Moreau Approves Controversial Biochar Plant to Process Sludge.**

The Moreau Planning Board has approved Saratoga Biochar(SB)'s \$29 million dollar plant for the Moreau Industrial Park after over a year of meetings. The proposal faced opposition from residents concerned about air and noise pollution. SB trucks will transport sewage waste to the plant multiple times a day, taking in 15% of New York state's waste.



Signs in Moreau expressed both support of and opposition to Saratoga Biochar's proposal to build a facility in Moreau Industrial Park.

➤ **Illinois Farmers Share in Rural-Urban Nutrient Loss Reduction Efforts.**

Lakes near Chicago accumulate phosphorous from rural and urban sources. Biochar-filled socks from Biochar Now are placed in the lakes to capture phosphorous. After the bags are removed from the water, the phosphorous-enriched biochar can be used as fertilizer in surrounding farms and landscapes.

➤ **Isère Cement Manufacturer Vicat Develops a “Carbon Sink” Binder.**

The Canadian company's new biochar binder will make it possible to reduce carbon footprint by almost 90% per cubic meter of concrete.



"Plants absorb CO2 in the forest, all the wood that must be removed from the forest, we recover them, we pyrolyze them and transform them into carbon," says Vicat partner Emil Soler-My. Vicat wants to certify the binder and receive a technical opinion by the end of 2023 to market it more widely.

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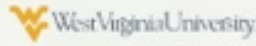
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