



US Biochar Initiative Newsletter

October 2021

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*"My administration is . . . proposing investments in sustainable and innovative uses for wood waste materials to produce advanced biofuels, **biochar**, heat, and power — including through sustainable aviation fuels and other sustainable biofuels. "*

Joseph R. Biden, [A Proclamation on National Forest Products Week, 2021](#) Oct 15, 2021

RESTORE FORESTS, DECARBONIZE BUILDING, AND SEQUESTER CARBON THROUGH FORESTRY, BIOMASS ENERGY, AND BIOCHAR

By Tom Miles, Executive Director

Forest and biomass industries can help grow biochar production and use. One Oregon mill, [the Freres Lumber Company](#), converts renewable fiber to carbon smart building materials, supplies fiber to paper and engineered wood products, generates firm renewable power, sequesters carbon, and enables carbon and nutrient cycling with biochar.



[Freres](#) deploys advanced technology to recover fiber from thinning well-managed forests, the mill converts wood to [cross laminated timber](#) (CLT) products which replace climate-unfriendly concrete and steel in tall buildings. They optimize fiber recovery from fire-damaged "black logs". Forest, mill, and urban wood residues, which would otherwise decay in the forest or landfill, are used to generate steam for processing and power for export. The company recovers carbon from the process which is used as biochar to enrich soils and soil amendments for urban landscaping and agriculture in a valley that produces value added crops like nuts, berries, fruit, wine and hemp.

Freres also sells carbon offset and removal credits from their low-carbon intensity processes. As markets grow they can look forward to incorporating technology to scale up biochar production. As a fourth generation Oregonian in the wood products industry, I am proud to see a local family using advanced technology to renew and sustain our forests, decarbonize building, and facilitate biological carbon sequestration in forestry and agriculture through biochar.

USBI continues to support policies that promote biomass conversion to fiber, energy and biochar to help restore ecosystems, sequester carbon, and reduce emissions through active forest and rangeland management. The Senate Committee on Energy and Natural Resources recently introduced the bipartisan [Senate Bill S.2836](#) - America's Revegetation and Carbon Sequestration (ARCs) Act of 2021. Section 203 of the bill directs the Food and Drug Administration to work with the USDA in coordination with the states to establish a pilot program for feeding biochar to livestock. Feeding biochar is an important high value use of biochar. All other countries feed biochar to improve animal health, reduce disease, medicines, and veterinary costs, and increase meat and milk production. Biochar-enriched manures reduce odor, nutrient leaching, and improve soil health in pastures which increase forage production and reduces feed costs.

USBI collaborates with the USDA Forest Service, Agricultural Research Service, and Natural Resource Conservation Service to promote the use of forest residues in climate smart agriculture. Please comment on the USDA's [Climate-Smart Agriculture and Forestry Partnership \(CSAF\) Initiative](#) on or before 11:59 p.m. (ET) on November 1, 2021.

USBI will launch a series of live, online, and in-field presentations and demonstrations on making and using biochar for foresters and agronomists to support the implementation of public biochar incentive programs this year. The first will be the, **Biochar in the Woods Workshop** Webinar and Field Days January 27-February 3, 2022. See the events calendar below.

Carbon markets for biochar have drawn interest from investors. USBI and IBI will present an online, interactive **Business of Biochar Symposium**, December 7-9, 2021 to match investors with entrepreneurs.

REGISTER TODAY!

The International Biochar Initiative and USBI are pleased to invite you to **The Business of Biochar Online Symposium** December 7-9, 2021
11:30 am - 2:30 pm ET (US)



Register Now



SUPPORT USBI FOR A SUSTAINABLE FUTURE

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BE A STEERING COMMITTEE MEMBER FOR 120K BIOCHAR GRANT!

The U.S. Biochar Initiative (USBI) and the Nebraska Forest Service (NFS), part of the University of Nebraska, Lincoln (UNL), have received a nearly \$120,000 grant through the U.S. Forest Service's Wood Innovations Grant (WIG) program. The grant funds the development of biochar fact sheets, use guidelines, and market road maps in seven areas - stormwater (or manure) management, animal feed, biochar-amended compost, soil blends and growing media, landscape turf and trees, and viticulture.

If you have subject matter expertise in biochar production, applications, and/or business development,

consider being a volunteer steering committee member for this exciting initiative. You will be asked to provide advice on developing



materials, review publication drafts, and attend a series of quarterly online meetings over the project's two-year period. Send your letter of interest, qualifications, and availability to USBI Education Committee Chair and Board Member [Heather Nobert](#) with "Steering Committee" in the subject line.

MEET A BIOCHAR PRACTITIONER

Zach Hartlyn

Salt Lake City Backyard Urban Gardens (BUG) Farms

Q What is the scale and scope of your urban farming operation?

A My partner, Kristen, and I purchased BUG Farms from some friends 3 years ago. We farm just under an acre of land distributed across eight, small backyard plots in our neighborhood in Salt Lake City. During our 22-week Community Supported Agriculture (CSA) season, we provide an average of 90 weekly vegetable shares to our members and plot-owners. Along with Kristen and I, we have several workers and volunteers each season. Over the last 3 seasons, we have been transitioning our practices toward no-till and away from reliance on deep tillage.

Q What is the soil like? Is there a lot of variability in the neighborhood? What are your top concerns about soil?



A There are some soil differences. Most areas are clay, one area has a nicer loamy soil. We also have fairly high soil pH (7.4-7.8) so we focus a lot on cover cropping and avoid salty high pH manures. We are most worried about drought so we want to build soil carbon to help retain water.

Q What made you decide to try biochar in your operation?

A Both Kristen and I studied biochar in school, so we knew about Terra Preta and how biochar sequesters carbon in the soil. Back when we lived in Vermont, we knew people who had experimented with biochar. We heard GO Biochar's John Webster on a local radio program and contacted him. He was very helpful and gave us the information we needed to get started. This was our first year using biochar. We charged it up with humates, compost, and azomite, and applied about 5 gallons for every 30 square feet in one of our worst plots with heavy clay soil.

Q What kind results did you see? Will you continue to use biochar?

A It's just the first year, and it was not a heavy application but I will say that the plot where we applied it was terrible last year and this year it was great. Of course, we made other changes, too, because you never just change one thing when you're farming but I think it really helped. We are definitely going to continue with biochar and use it in all of our plots next year. It is the right thing to do. We would like to incorporate better testing and diagnostic tools into our soil practices so that we can more objectively understand the state of the soils we grow in and whether our efforts are helping in any measurable way.

Q What do you mean by "the right thing to do?"

A Farming is hard on soil, even no-till farming. Yeah, we could have continued doing deep tillage and apply thousands of dollars' worth of blood meal and feather meal to our soil to get high yields, but it wasn't sustainable. It was taxing physically on our bodies and it does not build soil health. Even though we don't own these plots, we have shifted our focus away from an extractive mindset of getting what you can out of this ground before we lose it, to a mentality of trying to leave the soil better than we found it. Biochar is a major component of that focus.



Farming is not just a job, it's a lifestyle. It can be really hard mentally and physically, and it doesn't make all that much money. It often requires a faith in mysterious unseen forces, from tiny microbes to huge weather patterns, and an investment in things that might not payout within our short lifetimes. Kristen and I believe that the efforts we have made are paying off with better crop health and yields. We would like to continue to learn, experiment, and grow these practices, hopefully passing the knowledge and healthier soils on to the people that come after us.

Zach

Links to [Backyard Urban Gardens](#) and [GO Biochar](#).

Correction to last month's "How Biochar & Carbon Credits Work" article.

The reference to the California biochar-based carbon offset methodology was incorrectly attributed to the California Air Resources Board (CARB) when in fact the methodology under development is that of the Climate Action Reserve (CAR). The biochar community fervently hopes that CAR or other standards bodies will propose, and CARB will approve, a biochar methodology for use by CARB in establishing offset credits in the future.

BIOCHAR EVENTS CALENDAR



December 7- 9, 11:30 am - 2:30 pm EST (US) [The International Biochar Initiative and US Biochar Initiative invites you to an online symposium *The Business of Biochar - where investors and producers meet* \[Register Now\]\(#\)](#)

January 27 - February 3, 2022 [USBI Biochar in the Woods Workshop Live Webinar and Field Days](#)

increase the water-holding capacity and resilience of forest soils.



What A combination of live, online, and in-field presentations and demonstrations on making and using biochar in place in the forest.

Why Given the ongoing drought and dangerous wildfire conditions in California and throughout the west, we see an urgent need to train more people on clean techniques for converting problem forest vegetation into biochar onsite. Biochar can

Trainers Kelpie Wilson of Wilson Biochar Associates will lead the training in biochar kiln operations. Deborah Page-Dumroese, US Forest Service Research Soil Scientist, will lead biochar forestry applications training. We will also hear from many others who are developing and using these methods in forest settings around the US.

Who Forestry contractors, arborists, workforce supervisors, forest land owners, and staff from environmental NGOs and natural resource agencies who may be supervising forestry workers, or developing biochar forestry projects and programs.

[Click here for more Biochar in the Woods Workshop details.](#)



● **Biochar, a Wood Innovation Success Story**

This short fact sheet describes the collaboration between USBI and the US Forest Service: working together to spread the word about biochar through webinars and other educational resources that bring the sector together and build new relationships.

● **In-Woods Biochar Production Report**

In 2020, the San Juan Islands Conservation District in Washington launched the Islands Conservation Corps (ICC) to address a series of ecological challenges with forest restoration. Read this report on their program of in-woods biochar production and ecological monitoring of biochar applied to forest soils.

● **Teaching Authentic Soil & Plant Science in Middle School Classrooms - a Biochar Case Study**

This detailed project report includes templates for teachers to develop their own classroom experiments with biochar.

Our Biochar Learning Center database on the [USBI website](#) continues to grow!



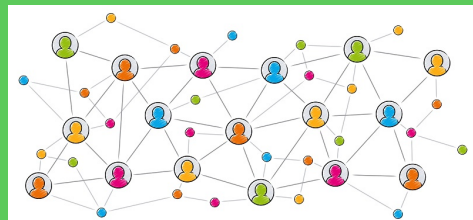
[Read real-world profiles of biochar practitioners at work here.](#)

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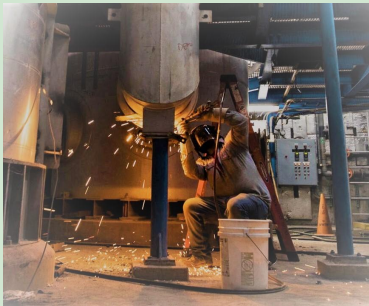
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> **New Bill Aims to Direct Nut Farming Waste into Sustainable fertilizer.** In Sacramento, California Representative Josh Harder is pushing a bipartisan bill that would help local farmers and tackle climate change. The Future of Agriculture Resiliency and Modernization Act would give billions of dollars for farmers to invest in green agriculture technology, including pyrolysis, to turn nut shells into biochar.

> **West Coast Researchers Turn to Biochar in Fight Against Climate Change** In Merced, California, researchers are using biochar to reduce methane in compost. Farmers in Washington's Methow Valley are developing Forest to Farm supply chains for biochar.

> **Spinning Wheat Straw into Biochar Gold.** Washington's Columbia Pulp LLC and Ag Energy Solutions, Inc. have announced an agreement to partner in processing wheat straw into biochar. This should reduce the burning of residual straw (one of Washington's top sources of air pollution) and create a new revenue stream for local wheat farmers by more than \$15 million annually. Biochar produced will be used as a soil amendment proven to increase crop yields and for carbon-sequestering initiatives.



> **Poop Pyrolysis Conserves Carbon.** Edmonds, Washington is converting the city's aging sewage sludge incinerator to a pyrolysis technology that will ensure that the carbon that gets flushed down the toilet won't just end up back in the atmosphere.

« A "fluid lift" incinerator at the Edmonds Wastewater Treatment Plant will be installed to produce biochar.

> **Poop to Biochar Via a Poplar Plantation.** In Eugene, Oregon, poplar slash from the Metropolitan Wastewater Management

Commission's (MVMC) 2021 Biocycle Farm Poplar Harvest was recently used to produce biochar. Biochar yields from the demonstration will be applied in pilot projects and assessed for their potential benefits. Potential pilot projects include use as a stormwater filtration medium, soil amendment for poplar trees, urban street tree plantings, drought-resilient turf for parks, and natural area restoration.



> **Farm Tour Opens Doors for Learning and Discovery.** Farms across southeast Nebraska participated in the Dig Deeper Farm

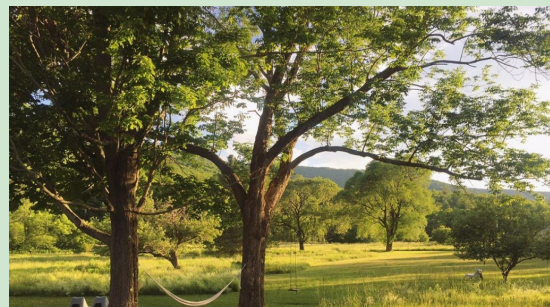


Tour last month, inviting people to see their facilities, shop for fresh produce, and learn more about local agriculture, including biochar production. At left, Common Good Farm Co-owner Everett Lunquist explains to visitors how biochar can be used in soil.

> **Terraform Research Includes Biochar.** California non-profit, Terraform, is funding a project led by Firefighters United for Safety, Ethics, and Ecology. The project educates and advocates for the use of biochar production in hazardous fuel

reduction treatments to reduce wildfire risks without causing adverse environmental impact. Biochar treatments greatly reduce site flammability while also enhancing soil carbon storage.

> **Texas Trees Get Biochar Medicine.** In a guide to pest control for trees, Treenewal recommends their biochar blend for all trees, but say it is especially useful for trees encountering pest and disease pressure. At right, biochar helps Texas trees improve digestion and supplement admission.



> **Biochar, Trees, and Precision Agriculture to Control Nitrate Levels in Rivers.** Nitrate levels in three Prince Edward Island rivers exceeded the Canadian Water Quality Guideline for Aquatic Life.

The province is now looking at using biochar to control it. Biochar spread on fields can reduce nitrate leaching by improving moisture retention.

« At left, the Dunk is one of three rivers found to have nitrate levels above guidelines.



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