



US Biochar Initiative Newsletter

November 2022

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Biochar Marketing and Outreach

by Tom Miles, Executive Director

USBI at COP27

USBI joined the international biochar community at COP27 in Sharm El-Sheikh, Egypt. USBI was represented by IBI Chair and USBI vice chair Kathleen Draper, IBI's acting executive director Wendy Lu McGill, and volunteers like Randall Kempner of the The Global Development Incubator. They reported improved visibility for biochar but much work must still be done. See Wendy Lu's report [here](#).



« The United Nations Development Project (UNDP) hosted IBI's Board Chair Kathleen Draper, Randall Kempner from The Global Development Incubator, IBI member NetZero's Axel Reinaud, Fairtrade International coffee grower, Submi Granados, and Mario Cerutti of Lavazza Group at COP27.

USBI Webinar: Biochar Funding and NRCS Code 808/336 Soil Carbon Amendment

Next month, Brandon Smith, of Allied Soil Health Services, LLC, will explain how biochar producers, farmers, ranchers, and family forest owners can benefit from the Soil Carbon Amendment (Code 808/336) practice which was adopted by the USDA Natural Resource Conservation Service (NRCS). See the events calendar below for registration info.

USBI at American Society of Landscape Architects ASLA 2022

USBI Communications Director John Webster, [GoBiochar](#), organized a USBI booth at the American Society of Landscape Architects annual meeting in San Francisco. John was joined by Doug Bogue of [Glanris](#), Eric Mayer of [NapaChar](#), and Grant Scheve of [AgraMarketing/Oregon Biochar Solutions](#). Read about what we learned in this newsletter. We are planning to exhibit next year at ASLA 2023 in Minneapolis, Minnesota.

USCC - Open Co-Sponsorship Opportunity

Join USBI at the US Composting Council [Compost 2023 Conference](#) January 24 -27, 2023, in Ontario, California. Producers interested in co-sponsoring or attending please contact john@biochar-us.org. Biochar-amended composts have good consumer acceptance in a highly competitive market. Look [here](#) for our USBI factsheets on biochar-amended growing media published in the USBI Learning Center.

CharBoss Demonstrations at Ouachita National Forest, Arkansas

USBI provides technical assistance to developers of mobile and stationary carbonizers that convert urban residues and hazardous forest fuels to biochar. Collaboration with federal and states agencies includes strategies for use and air quality permits for mobile devices including place-based flame cap kilns and conservation burns.

There are about thirty mobile devices in operation in North America including the [Carbonator](#) by Tigercat and the [CharBoss](#) by Air Burners Inc. Tigercat is testing a new model that should be available in 2023.

USBI assists the development and demonstration of the CharBoss which is a prototype in development through a Cooperative Research and Development Agreement (CRADA) between the US Forest Service and Air Burners, Inc. based on Air Burner's commercial BurnBoss. The CharBoss is being tested at the Ouachita National forest in Arkansas. Congressman Bruce Westerman (R-AR) recently witnessed the operation with about 35 forest service personnel from various locations. Westerman is an engineer, forester, and ranking member of the Natural Resources Committee who has introduced bills supporting biochar. The demonstration was on a windy day when it would not have been possible to open burn. The burn stimulated a lot of discussion and ideas about how air curtain burners and biochar can be used in forest management.



« USDA forester Jeff High chats with Congressman Bruce Westerman (R-Arkansas) at a CharBoss demonstration at the Ouachita National Forest in El Dorado, Arkansas.

USBI Marketing and Stakeholder Surveys

Establishing markets that can absorb large volumes is a significant challenge as biochar production increases. Look for surveys from USBI and the US Endowment for Forestry and Communities to identify stakeholder interests and ways in which we can help producers and brokers build markets to enable biochar production to scale.

Biochar and Biomass Energy: Bio360 and International Biomass Conference and Expo

Biochar is an important co-product of biomass energy and biofuels production. Many biomass power plants and gasifiers in wood processing facilities recover biochar as a co-product. At least one commercial biofuel plant generates heat, power and biochar, others are in development. Promote biochar to bioenergy producers at the upcoming conferences: **Bio360** in Nantes, France February 8-9, and the 16th annual **International Biomass Conference and Expo** in Atlanta, February 28-March 2, 2023.

BIOCHAR EVENTS CALENDAR



December 14-15 USBI Webinar: Biochar Funding and NRCS Code 808/336 Soil Carbon Amendment Learn how to benefit from the Soil Carbon Amendment practice. [Sign up here](#) if you don't have an email invite

Jan 24-27 Compost 2023, The World's Largest Composting Event, Ontario, California Learn about a University of Vermont study on how biochar co-composting of dairy manure substantially reduces methane. [Register here.](#)



Feb 28-Mar 2 16th Annual International Biomass Conference and Expo, Atlanta, GA

SCROLL DOWN TO SEE MORE NEED-TO-KNOW BIOCHAR NEWS!

- Biochar Biosolids and PFAS/Great Lakes Biochar Network
- Biochar for the Built Environment/ASLA Booth Report
- New USBI Learning Center Featured Resources
- Get a USBI Directory Listing
- Biochar Newslinks
- Ads and Opportunities

BIOCHAR, BIOSOLIDS, AND PFAS

Q What are biosolids?

Person Biosolids are the treated residuals removed during the treatment of sanitary wastewater at public wastewater treatment facilities that can be beneficially reused provided a number of requirements and safeguards are met. State and federal agencies have developed these requirements based on extensive risk assessments, developed to assure the practice is both protective of public health and the environment.

Biosolids can contain persistent chemicals like PFAS (per- and polyfluoroalkyl substances), a family of man-made chemicals used for their water- and stain-resistant qualities in products like clothing and carpet, nonstick cookware, packaging and firefighting foam. Unfortunately, PFAS was not included in the original risk assessments of biosolids conducted by the Environmental Protection Agency (EPA).

Q What are the dangers of PFAS?

Person Research has linked PFAS to health problems including kidney and testicular cancer, liver and thyroid problems, reproductive problems, pregnancy-induced high blood pressure, low birthweight, and increased risk of birth defects, among others (ehn.org).

Because of its widespread use over many decades, PFAS is ubiquitous in the environment and in our daily lives. It's present in everyday items like packaging, cosmetics and the dust in our homes. Determining its level of concern must begin with a thorough risk assessment to determine safe concentrations.

Q How are wastewater treatment facilities and public utilities now managing their systems and water quality to reduce PFAS?

Person With mounting concerns over PFAS, state and federal agencies and public utilities are working to better understand and quantify these concerns about biosolids. EPA has begun the process of conducting an extensive risk assessment of PFAS in biosolids which is expected to be completed by 2024.

Until then, many states are taking approaches to both quantify concentrations in biosolids and utilities are taking source

Meet the Great Lakes Biochar Network



Michael Person, Program Coordinator
Michigan State University

and surface modifications, could be excellent adsorbents to remove PFAS from water. These are still undergoing research work. The goal is to reach the sorption capability comparable to activated carbons.

Q What is the latest research on biochar's ability to help reduce PFAS-contaminated biosolids?

Person Biochars or modified biochars could be good adsorbents to sequester PFAS from biosolids. They could provide a quick and less-costly solution. Some research recently demonstrated that PFAS was removed from biosolids using pyrolysis and gasification processes. But there is concern over the energy cost and creation of other types of PFAS during the treatment.

Q What do you think the future holds for biochar as a PFAS treatment?

Person Biochar could be developed

reductions measures to eliminate significant sources entering the collection system. Source reduction has proven to be successful in removing PFAS from ending up in the wastewater effluent or in biosolids.

Q *How do current treatment technologies compare to biochar's effectiveness in reducing PFAS levels?*

Person Activated carbons and anion-exchange resins are commonly used as adsorbents to reduce PFAS levels in water. Biochars, particularly those with activation processes

into strong and selective adsorbents targeting the sorption and sequestration of PFAS. This could reduce its harmful impact on humans and other biota. The remaining question is how to treat the PFAS sequestered in the biochars.

Fortunately, several research teams are currently working the approaches to destroy PFAS sorbed on charcoal materials.

USBI OUTREACH AND EDUCATION

Biochar for the Built Environment - USBI at the ASLA Conference and Expo

USBI Communications Director John Webster

USBI had a booth last week at the **American Society of Landscape Architects (ASLA)** conference and expo in San Francisco. It was a massive event with about 6,000 attendees and some 400+ exhibitors. We focused on how to enhance built environments with biochar, highlighting it as a climate-smart soil building amendment that increases water holding capacity, improves soil biology, plant health, and sequesters carbon.

Landscape architects are tremendously influential in material purchasing decisions for the built environment. They touch everything from business parks, municipal landscapes, monuments, office buildings, community developments, churches, roadways, and much more. That means that many attendees are responsible for yearly purchasing of millions of dollars in materials.

With climate action as a major ASLA concern, we were able to leverage biochar's role in helping landscape architects change the world we live in with innovative vision for environmental stewardship and the practical application of biochar.

The USBI contingency included several biochar producers from across the country including; **Glanris**, **NapaChar**, **Agramarketing** (Oregon Biochar Solutions), and **GoBiochar**. Here's what we learned about biochar awareness from booth visitors:

- **50%** never heard of biochar
- **40%** heard the word "biochar" but had no understanding of it
- **10%** knew biochar and may have had occasion to use it

These results tell us that we have a long way to go in this influential market. We encouraged visitors to ask for IBI or EBC labs for biochar they purchase, directed them to the USBI website's learning center for application assistance, and referred them to the USBI provider directory for sourcing.

To further address this low awareness, USBI has developed the following strategy:

- **Get biochar listed in the ASLA best practices manual**
- **Request a technical presentation opportunity in ASLA2023**
- **Create educational materials specific to the landscape industry on how biochar benefits landscape architecture including stormwater management and bioremediation, how to source biochar and speak to your customers about biochar as an investment vs. as a line item expense) Seeking volunteers!**
- **Develop installation specs for; turf, shrub, tree, living roof/walls, and etc.**

What USBI Learned from ASLA Attendees

Attendees encouraged us to work within existing systems and influence municipal code in the larger cities where adaptation of biochar would lead to larger market opportunities. They also suggested that we reach out to the [California Landscape Contractors Association](#) (CLCA) and similar organizations across the country to build awareness and adoption into practices.

ASLA attendees with biochar experience pointed out that we need to address landscapers' or building managers' water management practices as they will often not turn down the water or will even turn up the water used in landscape to avoid complaints by tenants or property owners about turf or vegetation browning. All said, it was a tremendous success. USBI has already committed to [ASLA 2023](#) in Minneapolis. We encourage biochar producers to consider acquiring a booth at this yearly event. Those interested in sponsoring USBI efforts at ASLA2023 please contact john@biochar-us.org.

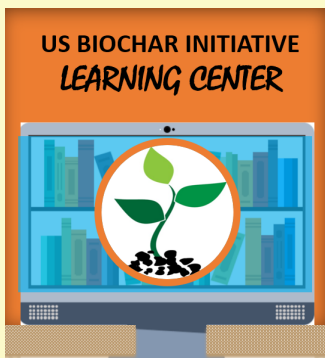


"We really appreciated the USBI outreach at ASLA to inform landscape architects about how biochar can be used to design healthier, more resilient landscapes."

Regional Sales Manager David Bogue of Glanris

Eager ASLA attendees often waited in lines at our USBI booth to get their questions answered! Some had basic questions like "What is biochar?"; others were more advanced on topics like applications, feedstocks, or carbon credits.

John Webster of GoBiochar

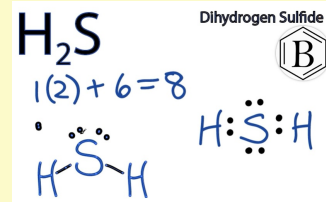


Biochar in New York State: Benefits and Challenges Moving Forward. Check out this recorded webinar presented by USBI Board Member and Cornell Extension Associate Dr. Debbie Aller. For resources and recordings of other webinars, visit [Genesee River Demonstration Farms](#).

Biochar Technologies for Urban Environments webinar Sponsored by USBI, you will need to register in order to view this free, on-demand presentation.

Can Biochar Reduce Hydrogen Sulfide (H₂S) Toxin? Some construction and demolition (C&D) fines that contain gypsum emit H₂S toxin. C&D also consists of sand and dirt, asphalt products, brick, block, concrete,

and organic materials like wood. Learn about the latest research on using biochar-blended fines in landfill applications to neutralize not only H₂S but per- and poly-fluoroalkyl substances, or PFAS.



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Listings are more than just an ad - they include information about your sector, products, applications, technology, and scale of your operation.

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GET A LISTING

This month, we welcome Blue Sky Biochar and Permanente Corporation in California, Myno Carbon in Washington, and Prospect Environmental Services PLLC in Vermont to the USBI Directory!

BIOCHAR NEWSLINKS

➤ **[Native Grasses, Biochar, Silvopasture Part of Arkansas Carbon Sequestration Study](#)**

The University of Arkansas will take part in a program called "Climate-Smart Grasslands: The Root of Agricultural Carbon Markets," to measure carbon sequestration and greenhouse gas reduction possibilities in American grasslands. Practices that will be studied include regenerative grazing to improve forage management; soil amendments with biochar and gypsum; and perennial native grass buffers around row-crop fields in marginally productive areas.



➤ **[Biochar Incinerator Tested for Forest Thinning, Soil Enhancement](#)**

The Blackfoot Challenge (a non-profit) is coordinating a biochar application with Montana ranchers. Biochar is being tested near Missoula on plowed and unplowed fields, irrigated and unirrigated fields, grazed and ungrazed fields, and in varying amounts — either 5 or 10 tons per acre. Private landowners and representatives from the U.S. Forest Service, Bureau of Land Management, Montana Department of Natural Resources and Conservation, The Nature Conservancy, Blackfoot Challenge, and a forestry company attended a demonstration of biochar production using the Carbonator and the Ring of Fire biochar technologies.



Greenside Construction's Tom Elder uses an excavator to

Beth Dodson, director of forestry program at University of

load small trees into a Tigercat 6050 Carbonator used to make biochar. – Joshua Murdock, Missoulian

Montana, demonstrates the Ring of Fire Kiln from Wilson Biochar, LLC, for making biochar from forest slash. – Joshua Murdock, Missoulian



> **Biochar Companies Are Finalists for \$1 Million Grow-NY Competition** Two biochar companies will compete with 17 worldwide finalists for a chance to win up to one million dollars in New York's Grow-NY competition. Seneca Farms Biochar develops, manufactures, and sells innovative, cost-effective technology to produce biochar, wood vinegar, and activated carbon. Hago Energetics Benefit Corporation uses innovative decarbonization technology to convert animal and agricultural waste into green hydrogen and biochar.

> **Soil Breakthrough Plants Hope in City Rooftops** Nate Griswold, the president of Inhabitect, a Traverse City, Michigan urban landscaping company focusing on the design and construction of green roofs, is lauding a recent University of Toronto study on granulated biochar for green roofs. Plants grown with granulated biochar grew 50% to 60% larger than those grown with conventional biochar. They also flowered about two weeks earlier. A significant advantage is that the granulated biochar's low density makes it lighter than conventional biochar. That could allow for larger green roofs, as their size is currently restricted by weight limits for structural reasons.

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