US Biochar Initiative Newsletter
July 2023

Having trouble viewing this newsletter?
Choose 'display all images' (at top of email) and
'view entire message' (at bottom of email) or click here for pdf.

WELCOME OUR NEW PROGRAM DIRECTOR
by Tom Miles, Executive Director

We are pleased to welcome Myles Gray, P.E., as our full time **Program Director.** Myles brings professional experience in the science and business of biochar to help us manage our many programs in market and technology development. We look forward to his help to promote biochar, demonstrate urban, farm, and field applications, and enhance our education and outreach. He is already immersed in a full slate of challenging activities and has been engaging our academic, industry, and policy partners.

Beyond Application: Learning More About Biochar, is our latest guidance document in the **USBI Biochar Learning Center**. It describes where to find online tools, technical and financial assistance, the fertilizer and liming values of biochars, biochar persistence in soils, and barrier to farmer adoption. Case studies illustrate improving drainage, water use efficiency and small batch production.

We enjoy hearing from you. Congratulations to companies like Ohio Valley Biochar, VOW Biogreen Energy, Nexus PMG and others for new products, businesses, and projects, and increased biochar sales. Join us at conferences and trade shows and expect to hear from us soon as we roll out a market study to help guide our technical and market support.

North American Biochar Conference 2024, Sacramento California - Save the Date February 12-15! Expect a call for abstracts soon. Watch for updates on our social media channels.

Thanks to the US Endowment for Forestry and Communities for their support and guidance and for USFS assistance in helping to stimulate markets and technology to use forest and agricultural residues and develop tools for a new Green Carbon Economy.

USBI HAS CHOSEN ITS FIRST PROGRAM DIRECTOR - *MYLES GRAY*!

Initially, Gray will be focusing on building organizational capacity, markets and standards, technical assistance, education and outreach, special initiatives, and strategic planning. He most recently served as Myno Carbon's Product Director for Carbon & Biochar (WA) and has a dual MS from Oregon State University in MS Soil Science and Water Resources Engineering.

Q ***Myles, welcome to USBI! We're looking forward to your leadership and learning from your experience as a researcher, designer, engineer, and project and product manager in the biochar and stormwater green infrastructure space. Tell us a little about what drew you to biochar.***

Gray | I'm deeply interested in the holistic nature of biochar as a carbon removal strategy and way to mitigate the effects of climate change. Biochar offers such a beautiful way to manage waste biomass, sequester carbon, improve soil quality, replace high-carbon materials, and produce biomass energy or fuels – all at once! Compared to other high-durability carbon removal technologies, biochar creates incredible co-benefits that make this approach so beneficial to the planet *and* communities.

Q ***Would you say this a unique time for the biochar industry?***

Gray | **Yes. The biochar industry has this remarkable chance to establish a tangible, effective, holistic carbon removal strategy during a period of global recognition of climate change.** Realizing this goal of biochar as a globally-relevant carbon mitigation approach will require a *massive* increase in the scale of production.

Q ***What's next for the industry?***

Gray | I think the industry is headed for enormous growth in both impact and scale. For years, the biochar industry has grown organically through an incredible grassroots network of enthusiasts and small-scale producers, but was largely ignored by large companies and organizations. That's changing quickly, spurred by carbon removal credits and a growing global interest - among policymakers, corporations, and the general population - in mitigating the worst impacts of climate change and achieving net-zero.

Q What are the industry's major opportunities?

Gray | Great question! From the practical perspective of biochar production, the**low hanging fruit lies in waste biomass solutions for agriculture, municipal solid waste, and forestry**--each of which pose unique challenges and opportunities. In agriculture, opportunities to utilize field crop residues and orchard and vineyard trimmings are especially interesting as agricultural residue burn bans, like those coming into effect in California, become more common.

Within municipal solid waste, there is major opportunity to char both urban wood waste and wastewater treatment biosolids where conversion to biochar can eliminate contaminants of concern like PFAS.

In forestry, extraction of biochar from existing biomass boilers presents the most obvious near-term opportunity, but there are also regions where forestry residuals go unused or are used for relatively low-value applications. Over the long term, biochar production could certainly become a key component of forest restoration and ecological management strategies, providing a market for low-value forest thinning residuals.

Pyrolysis gasses should also be an area of focus.The biochar industry can increase scale and producer profitability by focusing on the value of pyrolysis gasses, which are often considered waste products. By using existing biochar production technologies, these gasses can easily be converted into sustainable biomass electricity or condensed into value-added materials like organic pesticides, plant stimulants, and sustainable oils. In a decarbonized world where petroleum products are limited and expensive, condensed pyrolysis oils may well become feedstocks for plastic production, sustainable aviation fuel, and other materials, creating a scenario where biochar represents a low-cost byproduct.

Other significant market opportunities include the use of biochar as an ingredient instormwater green infrastructure, soil products (potting media for horticulture), and soil amendments for large scale agriculture. Increasing support from the USDA Natural Resources Conservation Service for the latter is driving significant expansion.

Longer-term, significant volumes of biochar could be used as an ingredient in high-efficiency biochar-**enhanced fertilizers, as a feed additive to improve animal health, and as an ingredient in building materials like concrete.** There may also be opportunities in some carbon black applications such as black pigment and potentially as a component of tires.

Q What do you see as the biggest challenges for the biochar industry and how can our community overcome them?

Gray | **Biochar market development** has--and continues to be--one of the main challenges in the biochar industry. Market development is often the limiting obstacle to project financing. This is particularly an issue for financing large-scale projects where large volume offtake agreements for biochar are required by investors and bankers. These large-scale projects have real potential to produce biochar at a lower price point, which should grow the market for biochar, but most financial organizations are not ready to assume this market development risk.

Developing markets will require concerted efforts byUSBI, other NGOs, government agencies, but most importantly by biochar producers and end-users. USBI can help overcome this challenge by supporting producers and end-users, starting with the development of high-quality biochar production standards and specifications so that biochar end users can be certain they are sourcing material that meets their needs.

The biochar industry also faces a challenge in**transitioning from an enthusiast-driven community to a well-capitalized growth industry.** That transition is needed to scale biochar production as a globally-relevant climate mitigation strategy, but it needs to be done in a way that respects the progress that has

already been made by the biochar community, while also supporting the needs of biochar producers and financiers.

Q ***What are the most important near-term goals you hope to achieve at USBI?***

Gray | Developing a **clear and actionable organizational strategy that supports growth** This strategy will center on the needs of biochar producers, project proponents, and investors, while also supporting members of the grassroots biochar community. During my first months at USBI, **I'll work closely with the board of directors** to develop a robust strategy to guide the growth of the organization. I'll also **collaborate with a number of non-profit organizations and biochar producers** to leverage their experiences to help increase the impact, effectiveness, and reach of USBI.

Q ***What are the most important long-term goals you hope to achieve with USBI?***

Gray | My hope is that USBI will become a key component of a dramatic increase in North American biochar production. My goal is for USBI to support **NA growth from less than 1 million tons annual production today to at least 10 million tons of annual production by 2030.** This growth will be led by biochar producers with **USBI continuing to serve as a leading and trusted source** of knowledge, advocacy, and policy support on all aspects of the biochar industry including feedstock sourcing, production technologies, pyrolysis gas valorization, biochar markets and specifications, carbon credits, and federal policy. USBI can also continue to be a **key networking and organizing resource** that brings together producers, investors, government agencies, conservation partners, environmental justice advocates, and carbon creditors to identify and remove obstacles to expanded biochar production and use.

Reach Myles here or on LinkedIn!

BIOCHAR EVENTS CALENDAR

August 23 - 24 ***2023 Healthy Soil Summit,*** Seaside, CA (Near Monterey Bay) Don't miss this essential event for farmers interested in improving their soil health management systems! **Register here.**

August Aug 29 - 31 ***StormCom,*** Dallas, TX - the storm water industry's premier event connecting storm water managers, erosion control specialists, and engineers from around North America for idea-sharing and networking. **Register here**.

Sept 17-22 ***Bio-Char III: Production, Characterization and Applications,*** Tomar, Portugal - a forum for discussing biochar's long-term performance, sustainable biochar feedstocks, production processes, co-products, applications, policies, case studies and more. **Register here.**

Oct 4-6 ***WEFTEC (Water Environment Federation)***, Chicago - Learn from experts about the latest trends, and latest technology and trends **Register here.**

Oct 29 - Nov 1 ***ASA-CSSA-SSSA (American Society of Agronomy (ASA), Crop Science Society of America (CSSA) and Soil Science Society of America (SSSA))***, St.Louis, MO - offers technical presentations, hands-on workshops, networking events, award ceremonies, and field tours. **More information** here.

Oct 30 - Nov 1 ***Processing Technologies for the Forest & Bio-based Products Industries Conference,*** St. Simons Island, Georgia - attracts technical managers, product and process engineers and academics and features the latest research and advancements **Register here.**

Nov 7- 8 ***National Carbon Capture Conference,*** Des Moines, IO - designed specifically for companies and organizations advancing technologies and policies that support the removal of carbon dioxide. Topics range from tax policy and permitting to new technologies and creating carbon value. **Register here.**

February 12-15 ***2024 North American Biochar,*** Sacramento, California - Join leading industry experts to discuss the latest biochar science, application methods, material trends, government programs, and economic drivers building green biochar jobs!

Watch July newsletter for registration information, sponsor opportunities, exhibitor rates, lodging options, and much more.

Interested in sponsorship or an exhibit?

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

USBI Board Member Corner

USBI is so grateful to the many talented and experienced biochar pioneers who serve on our Board.

Jeff Waldon, USBI Board Member

Jeff is also Managing Partner of Restoration Bioproducts LLC which uses bioenergy and carbon capture and sequestration utilizing pyrolysis to produce bio-oil and biochar. **Learn more about Jeff!**

//

Check out this new fact sheet to learn about online tools, technical and financial assistance, the fertilizer and liming values of biochars, biochar persistence in soils, and barrier to farmer adoption. Case studies illustrate improving drainage, water use efficiency and small batch production.

OUTREACH & EDUCATION

TRIAL AND ERROR

Do You Big Box Biochar?

by John Webster, USBI Communications Director

The US Biochar Initiative in conjunction with Utah Biomass Resources Group and Utah State University Extension Forestry is seeking input from anyone that has experience with the Big Box firebox systems.

Our objective is to further expand the value on its Open Source kiln design. To do so, we need to hear about your successes and failures. What

modifications did you make? Share the good and the bad so we can drive this program forward.

Please email darren.mcavoy@usu.edu or john@biochar-us.org with your input.

Have design ideas to improve the Big Box? We want to hear from you!

Get all the Biochar Fact Sheets on our Biochar Learning Center.

Download the **Biochar Crop Applications Guidelines** now.

Need biochar information for an upcoming podcast, webinar, or newsletter? Let us know! info@biochar-us.org

Sponsorship Opportunities - Biochar In the Woods

SPONSOR THIS!

USBI is offering sponsorship opportunities for the Biochar In the Woods monthly webinar series and discussion forum.

Sponsor levels start at only $500 per month.

This program supports forestry professionals, ecologists, and fire service professionals. Your support will help us bring this program to a wider audience.

Contact john@biochar-us.org for information.

NEWSBYTES

► ***$21 Million in Technical Assistance Grants Now Available through Inflation Reduction Act*** Agricultural producers and rural small businesses now have access tofederal funds in 2023 and 2024 for purchasing and installing seven types of renewable energy systems, including biomass (such as biodiesel and ethanol, anaerobic digesters, and solid fuels). Learn more about Rural Energy for America Program (REAP) funding and eligibility here.

► ***$4.9M Grant Means Bright Days Ahead for Sunshine Organics and Compost (SCO)*** SCO has been awarded a $4.9 million grant from the USDA Rural Development (RD) Fertilizer Production Expansion Program (FPEP) to make biochar from commercial food waste. This state-of-the-art facility in Duval County, Florida will produce innovative composting and biochar products, reduce the use of chemical fertilizers, improve soil quality, and mitigate methane levels by keeping food waste out of landfills.

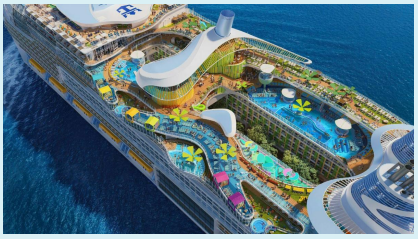
Photo courtesy of Sunshine Organics and Compost

► ***Protesters Continue to Oppose Biochar Facility*** The proposed Saratoga Biochar Solutions Manufacturing Facility continues to meet resistance in Moreau, NY. The proposed 34,100 square feet facility would handle 720 tons of biosolids per day. The plant is designed to create a carbon fertilizer out of biosolids. Protesters are concerned about noise, odors, and contaminants from the process.

► ***Nexus PMG Gets $50M Equity Boost for Carbon Capture and Storage and Renewable Natural Gas and Biochar Business*** Nexus PMG, based in Georgia, has been researching biochar, derived from plant waste and for several years. CEO Ben Hubbard says multiple biochar plants will be online within a year with biochar selling at $750 per ton. He expects the highest margins from Nexus PMP's carbon advisory business.

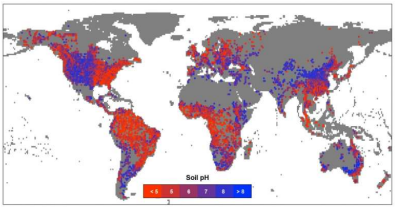
Nexus PMP biomass power facility in Carnesville, Georgia »

► ***Good Cop Biochar Could Make Wastewater Safe for Agricultural Use.*** By filtering out antibiotics from municipal wastewater, biochar made from plant waste might give farmers a source of clean water which has grown scarce due to climate change. Unfortunately, wastewater treatment does not filter antibiotics. Scientists from UC-Riverside, USDA, and the U.S. Salinity Laboratory are collaborating on just such a project.



► ***Royal Caribbean's Newest Ships First to Turn Solid Waste Into Energy*** Royal Caribbean's *Icon of the Sea*, and *Silver Nova* plan to incorporate microwave assisted pyrolysis and micro auto gasification for energy aboard the vessels resulting in biochar production on the high seas!

► ***Study Shows Soil pH (soil fertility) Is Tightly Linked to Climate*** Researchers conclude that It only takes a small change in climate to achieve the switch from acid to alkaline zones and there are fewer soils with an intermediate pH (most intensively farmed areas).



Global soil pH map shows the driest areas in red and the wettest in blue. Courtesy of University of California - Santa Barbara »

► ***Restoration Fuels in Oregon Ramps Up Biochar Operations.*** "It's really about giving the loggers and the Forest Service a way to clean up the forest," said Restoration Fuels Operations Manager Mark Allen. Described as the first commercial-scale torrefaction facility in North America, the company is a subsidiary of the U.S. Endowment for Forestry and Communities. (Torrefaction is the process of roasting waste wood to produce high-carbon solid fuel for use in power plants.)

Welcome to the USBI Directory! Prime 6, a large-scale biochar producer and manufacturer in New York, signed on to USBI directory this month!

---------- promotional section ----------

Newsletter ads reach over 5000 readers per month!
Contact info@biochar-us.org to become a sponsor.

Contact INFINITESOLUTIONS

STAY CONNECTED

Visit Biochar-us.org for more information.

USBI is supported in part by The United States Endowment for Forestry and Communities, Inc. The Endowment is a not-for-profit corporation that works collaboratively with partners in the public and private sectors to advance systemic, transformative, and sustainable change for the health and vitality of the nation's working forests and forest-reliant communities.