

April 2024 Newsletter

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New Demands for Biochar & Market Support

Our Global Biochar Market Report is out! [\[Download\]](#) This collaborative effort between USBI and International Biochar Initiative (IBI) provides a snapshot of the rapid growth and maturation of the biochar industry. Carbon dioxide removal, biochar, and biochar-enhanced products have attracted new levels of interest and activity globally. The industry has matured significantly, with an increased number of biochar-amended products in wholesale and retail markets. We are pleased to report that North American production has surpassed our expectations.

To address the challenges ahead and support untapped opportunities, USBI continues to prioritize biochar and carbon markets, product quality specifications, and standards to support market growth. In April we will be launching a process to develop an ANSI standard for biochar, a key need for developing biochar products.

Our networking, demonstration, and educational tools were in high demand at the North American Biochar Conference, leading to numerous collaborations among attendees. Since the conference many participants have visited producers and technology suppliers across the country, while others from around the world have contacted us to explore marketing arrangements with North American companies, including branded and co-branded biochar-enhanced products.

More information is now available. The Australia New Zealand Biochar Industry Group (ANZBIG) has released a helpful [Farmer's Guide](#). The Latin American Biochar Institute (IBLI) is working on translating important biochar documents into Spanish. The European

Biochar Industry Council (EBI) has published their [23/24 market survey](#), and USBI and IBI have launched the results of our [Global Biochar Market survey](#),

In recent events, Myles Gray, USBI Program Director, presented on scaling the industry at North American Carbon World in San Francisco. John Webster, USBI Communications, represented USBI at the Intermountain Sustainability Summit in Utah. USBI Board members have been actively providing technical and marketing support. Albert Bates conducted biochar demonstrations in California, Kathleen Draper presented a webinar on Biochar in the Built Environment, and Chuck Hegberg will be discussing biochar at the upcoming 2024 National Stormwater Conference. USBI has initiated a North American biochar standards development process with international standards organizations.

The USDA Forest Service Wood Innovation Grant program received numerous proposals for biochar projects, while US Department of Energy (DOE) and USDA Natural Resources Conservation Service (NRCS) have released funding opportunities for biochar projects.

Online, Dr. Andrea Watson from the Concordia University of Nebraska presented "Considerations for biochar use in beef cattle systems" in the [Practical Implementation of Biochar](#) webinar series as part of the Biochar Atlas project with USDA Agricultural Research Service and American Farmland Trust. Next up April 17 is a "Live Discussion with Biochar Producers". Regional groups like the Minnesota Biochar Initiative have been hosting regular online chats. USBI's online discussion are ongoing at [Biochar Groups.io forum](#) and [Biochar In The Woods Groups.io Forum](#).

Producers are encouraged to send biochar samples to Rachel Baschieri at the USDA ARS [Biochar Atlas Project](#) for a free analysis that can be applied toward NRCS applications. These samples will help USBI develop practical standards to help producers reduce the cost of quality assurance and quality control while improving consumer confidence.

USBI appreciates the initiative and collaboration of biochar producers, brokers, and consumers as we work together to develop new markets and applications.



Tom Miles
Executive Director

Looking to the Future by Myles Gray

I just wrapped up an incredible few days at [Climate Action Reserve](#) North American Carbon World, and I'm feeling optimistic about all the biochar opportunities! From deep dives into carbon markets to conversations about biochar benefits and practices, it was a whirlwind of learning and networking, but there was clear interest in biochar.

I had the privilege of presenting to a standing-room only crowd, with great Q&A fielding insightful questions. The conversation continued as I engaged in dozens of follow up

discussions with enthusiasts interested in learning more about #BCR (Biochar Carbon Removal). The momentum is real!

As the carbon dioxide removal industry continues to mature, buyers are starting to more clearly value co-benefits. Biochar clearly leads as THE standout solution for durable CDR with co-benefits, ranging from boosting soil health, to displacing high carbon intensity materials, to building ecosystem resilience, to reducing soil GHG emissions, to increasing economic opportunities in rural areas. Biochar is so much more than CDR. Moving forward into spring, we are using the results from the Global Biochar Market Report to prioritize our efforts at USBI, with a clear focus on developing biochar standards, building markets for physical biochar, and promoting biochar in the CDR and carbon credit space.

In standards, USBI is set to launch a process to develop an American National Standard, through ANSI, using an open and transparent process that forms the basis for increasing market demand for thousands of different types of products, soon including biochar! We will kick off this process off in April and are putting together an expert team to get it done.

In markets, we are leaning in to developing soil and agricultural markets for biochar, including through project work on the Biochar Atlas as well as a recently funded Department of Energy project to develop biochar-enhanced fertilizers in collaboration with Washington State University and Oregon Biochar Solutions. These projects, along with others, will form the basis for our soil and agriculture program which is currently in development.

In the CDR space, we are focused on building the case for moving beyond CDR credits to focus on insetting biochar to reduce Value-Chain Emissions. I will be speaking at an upcoming AirMiners event on April 10th, and we are also developing a guidance manual on the topic that we hope to release in summer 2024.

Myles Gray
Program Director



LAUNCHED!



GLOBAL BIOCHAR MARKET REPORT

2023 Study Results Summary

IBI and USBI held a joint webinar to launch our first global biochar market report since 2015. Key findings include:

- Global market revenues exceeded \$600M in 2023
- Significant projected growth to \$3.3BN by 2025
- Biochar is the leading carbon removal tool delivering over 90% of durable CDR credits in 2023


[Watch the webinar on YouTube.](#)

Launch Webinar: 2023 Global Biochar Market Report

IBI **Industry Growth: Key Drivers**

What are the key factors driving growth of the industry? (Select top 3)

Growing awareness of biochar	62%
Carbon credit demand	50%
Increased agricultural demand	33%
Improved biochar products	26%
Government incentives or subsidies	24%
Production technology improvements	20%
Demand for pygas products	14%



Follow to Download Report!

Biochar Atlas - Fresh Update

The preliminary round of US producer biochar tests are just wrapping up but the Biochar Atlas team needs more biochar to test!

USBI encourages all interested biochar producers to participate because Biochar Atlas analysis results are accepted for use with the Code 336 program!

Contact Agricultural Research Service agent [Rachel Baschieri](#), 541-738-4168, to arrange sample testing. pnwbiochar.org/home/submit_sample



Attended NABC24? Take the Post-Conference Survey for a Chance to Win!

Take the Survey Now!

The survey is closing soon. Help USBI make the 2025 event even better. All surveys completed by end of April will be entered into a drawing for \$250 off their 2025 Biochar Conference pass!



WOMEN IN BIOCHAR - Part 2

Working with the team at the USBI, we have put together another round of interviews to spotlight the incredible women driving the biochar industry forward. This initiative is rooted in raising awareness about biochar and honoring the significant contributions by women.

In Part 2, I had the privilege of holding conversations with:

- **Debbie S. Page-Dumroese**, Ph.D., USFS Research Soil Scientist, and Key Developer of the CharBoss Mobile Air Curtain Burner
- **Isabel Lima**, Ph.D., USDA Research Scientist at the USDA and USBI Board member
- **Jodi Formosi**, CEO/Founder of Bella Biochar Corporation
- **Laurie Mann**, Entrepreneur/Owner of American BioChar Company and Plant Growth Management Systems



In the spirit of transforming the world of biochar,

[Abby Crisp](#), Fellow, UC Berkeley Outreach
Contributing Author - Circularity & Ag Partnerships @ Towing

Debbie Page-Dumroese Ph.D.

Page-Dumroese played a key role in developing the game-changing CharBoss mobile air curtain burner and biochar spreader. Learn about her insights into biochar's versatility and how the impact of compaction varies with soil texture. Compaction can increase productivity in sandy soils by improving moisture retention, while it has detrimental effects on clay soils.

“We're exploring how much biochar can be produced based on feedstock type and moisture content...”



USFS Research Soil Scientist Service, Key Developer of the [CharBoss](#) Mobile Air Curtain Burner

[Read more](#)

"The challenge is to come up with new ideas"...such as designing biochar that effectively adsorbs "new pollutants (e.g. PFAs)."



USDA Research Scientist and US Biochar Initiative Board Member

Isabel Lima Ph.D.

Lima is intrigued by biochar's capacity to address agricultural waste disposal challenges - particularly its effectiveness in removing heavy metals from wastewater, surpassing commercially activated carbons. She also discusses large field studies that show increased sugarcane yields from biochar application.

[Read more](#)

Jodi Formosi

Despite setbacks, Formosi says stay focused on the belief that the impact you're going to make is real. For instance, when her venture was still pre-revenue and at a crucial point in their R&D, the axle of their very used tractor trailer collapsed. So, she made a deal with a very kind and compassionate local scrap dealer to trade all of our metal scrap for life in return for a replacement. At Bella Biochar, Formosi says, we don't "Bootstrap", we "Brastrap".

When it comes to waste management, people you meet..."might not get what you're trying to do right away."



CEO/Founder of Bella Biochar Corporation

[Read more](#)

We term municipal trees planted in inadequate conditions (near pollutants, for example) "tree coffins".



Founder/Owner of American BioChar Company and Plant Growth Management Systems

Laurie Mann

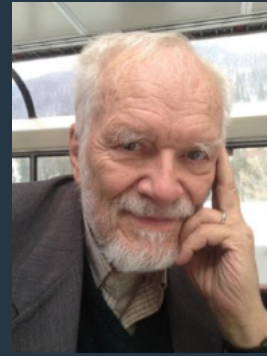
In Mann's work with utilities and cities helping them maintain their rights of way in a tree-sensitive manner, she and her partner noticed a recurring issue. Many newly planted trees, despite substantial budget allocations for urban forestry, had low survival rates, sometimes only 20% to 30%. Now they tap into the vast potential of biochar to impact soil health for greener urban spaces.

[Read more](#)



USBI BOARD MEMBER CORNER

Ronal Larson PhD has been a USBI board member since 2010. A retired professor from the Georgia Institute of Technology (Georgia Tech), he was the first Principal Scientist at today's National Renewable Energy Laboratory in Golden, Colorado, Dr. Larson was also the first coordinator of today's most active biochar internet list now named "biochar".



Board Member Ronal Larson, PhD

[Learn More About Ronal](#)

Biochar Funding Opportunities

USDA NRCS Code 336 Soil Carbon Amendment

Through the National Resources Conservation Service's Environmental Quality Incentives Program, agricultural producers can apply for financial assistance under Practice Standard 336. Deadlines vary by state. [More information here.](#)

DOE Opportunities

On February 12, 2024, the U.S. Department of Energy's (DOE) Office of Fossil Energy and Carbon Management (FECM) announced up to \$100 million to help develop a commercially viable carbon dioxide removal industry in the United States. This includes opportunity for biochar projects. [Carbon Negative Shots - Pilot Program Funding](#)

Outreach and Education



[USFS CharBoss LCA Report - Download](#)

Charboss LCA Making News in Forestry & BCR Practices

Exciting carbon removal news from a recent USFS Rocky Mountain Research Station and USBI-funded research project on mobile carbonizers!

Did you know?! Innovative biochar production methods using mobile pyrolyzing air-curtain incinerator (ACI) systems are turning up the heat on sustainability with their cool tech! Led by [Biosystems Engineering](#), this full life-cycle GHG pollution study quantifies the incredible potential of technologies like the [Air Burner CharBoss](#) and the [TigerCat Carbonator](#) in converting troublesome biomass (wood) into biochar.

This follows earlier groundbreaking research in conjunction with the [Oregon Department of Environmental Quality](#) that quantified particulate and other emissions from air-curtain incinerators compared to the standard pile burning approach. Here are the key highlights you need to know:

Carbon Removal Powerhouse Each ton of biochar produced from the CharBoss can remove up to 2.70 tons of CO₂ from our atmosphere, this conversion rate rivals, or even surpasses, some industrial biochar projects. Data were analyzed according to the [Puro.earth methodology](#). Talk about impactful sustainability!

Efficient Conversion Rates Air curtain incinerators excel in producing high-temperature, high-carbon biochar, achieving conversion rates of up to 17% of input feedstock (bone dry basis). That's efficiency at its finest!

Drastic Emission Reductions Compared to traditional open-pile burning, biochar-producing ACI units slash particulate and other polluting emissions by over 80%. Serious game-changer for cleaner air and a healthier environment!

Impressive Output Imagine this - a single CharBoss unit operating for 12 hours can transform 20 tons of biomass into 3.5 tons of biochar. This translates to over 9 tons of Carbon Dioxide Removal (CDR) credits per day. Now, that's what we call impactful!

Lucrative Opportunities for Green Jobs! With up to 890 tons of biochar production annually per unit, generating over 2,400 tons of CDR credits per year, the revenue potential is staggering! At current biochar CDR prices, we envision a day when a single CharBoss could rake in up to \$400,000 annually from carbon credits alone. Talk about turning green initiatives into well paying biochar jobs!

Scaling Up for Success Larger TigerCat Carbonator units have the potential to process up to 12 times more biomass feedstock than the CharBoss, leading to even greater biochar production, CDR tons, and CDR credit revenue opportunities. It's all about scaling up biochar for a sustainable future!

USFS and USBI research isn't just groundbreaking - it's paving the way for a greener, cleaner, and more prosperous tomorrow with biochar carbon removal. Let's harness the power of innovation to combat climate change and create a brighter future for generations to come!

Special thanks to the team that worked on this. Find this report on the [USBI Slides & Presentation Center](#).



[USFS CharBoss LCA Report - Download](#)

Join the USBI Directory Services!

We are building **the most comprehensive biochar directory** for the US market.

Join the directory, search the directory, and use the directory to connect with others in the North American biochar network. Together we are putting the world's carbon budget back in the black!

A warm welcome to [Southwest Biochar Products](#) and [Waste Recovery Technologies Carbon-Gas Group \(WRT\)](#) - our newest additions!

[Get Your Directory Listing](#)

What to Watch

SoiLab - Biochar in Turf videos

Our friends at SoiLab have been doing some fantastic biochar videos lately. Check out the turf grass trials!

Does Biochar Work? Will Biochar Work For You? - Find Out Now!

Humic Acid and Biochar Rooting Mass- Must See!!

Does Biochar Work?



Humic Acid and Biochar Rooting Mass- Must See!!
SoiLab

Biochar Events Calendar

Connect and collaborate at in-person or online events!

April 2024

April 3 Biochar In The Woods Monthly Meeting USBI Working Group. Monthly discussion about opportunities for making biochar in the woods and the fields. Led by Kelpie Wilson.

April 8–11

National Watershed and Stormwater Conference | Center for Watershed Protection | Join USBI Board Member Chuck Hegberg, 4/8 workshop & then 4/9 presentation @ 9:45 am | *Kansas City, Missouri*

April 10

Beyond the VCM: Opportunities for Biochar Insetting | AirMiners Webinar | Join USBI Program Director Myles Gray, along with other experts in the space. 9 am Pacific

April 17

Live Conversation with Biochar Producers | American Farmland Trust/USDA ARS/USBI | Practical Implementation of Biochar Webinar Series | USBI Executive Director Tom Miles will moderate a panel discussion with biochar producers. Watch USBI social channels for signup.

April 17

NYS Organics Summit, Buffalo, NY. NYS Organics Council Kathleen Draper, USBI Board, presenting on biochar and compost at the 10th Annual Summit. This is part of the New York State Association for Reduction, Reuse and Recycling.

April 21–27

SF Climate Week | CLIMATEBASE | *San Francisco, California*

Puro SF CDR Summit during SF Climate Week | **Puro** | *San Francisco, California*

May 2024

May 5–12

[IBI Biochar Academy](#) | International Biochar Initiative | *Chang Mai, Thailand*

June 2024

June 1

[An Introduction to Biochar Production and Use Workshop 11am – 4 pm](#) | **Hunt Country Vineyards** | Kathleen Draper (Carbon Standards International, Finger Lakes Biochar, USBI Board) will lead this one-day workshop on biochar production, feedstocks and uses. *Branchport NY*

[See More Biochar Events](#)

Looking for biochar industry career opportunities?

[Check out LinkedIn for sales, research, internship postings, and more!](#)

Biochar Newsbytes



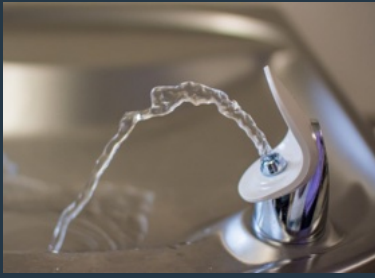
Credit: Sonoma Index Tribune

[Biochar Creates Happy Hour Long After Bar Closes](#) In California, Gloria

[Municipal Counties Partner on Biochar Production](#) Two Minnesota counties have announced their partnership with Dem-Con Companies to create renewable energy and sequester carbon – utilizing food and yard waste to produce biogas for electricity and heat and turning the solids that remain into biochar. Last week, Minnesota House Climate and Energy Finance Policy Committee members discussed a bill to unlock federal funding for the project.

Ferrer Caves and Vineyard hosted a demo on how to convert dead vines to biochar and add it into fertilizer that's spread back onto the estate — utilizing vineyard waste to improve soil health, water retention, and carbon sequestration in vineyard soils. The demo was an effort to promote eco-friendly biochar practices in Sonoma County where just 1% of vineyards dispose of vines through biochar production.





Credit: Gulf Coast Media

What If Biochar Could Remove PFAS from Drinking Water? The EPA has awarded funds to Auburn University, in collaboration with Tuskegee University, to develop a cost-effective and sustainable method that uses biochar and ultraviolet radiation to remove PFAS from drinking water. The award is part of EPA's \$1.2 People, Prosperity, and the Planet (P3) Program.

[Carbonation on Biochar] Podcast This Carbon Herald news site interview features Jason Highberger, CEO and Co-Founder of Biochar Life – a company on a mission to battle climate change while improving the lives of smallholder farmers in the developing world. Jason talks about his work with artisanal biochar producers to remove 1 million tons from the atmosphere



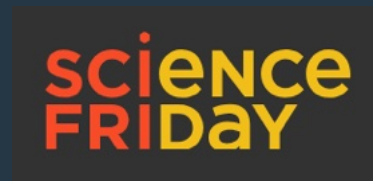
Credit: Carbon Herald

by 2030.



First Insured Biochar Credits to Market! Amid soaring demand for BCR (Biochar Carbon Removal), risk-protection insurance will help guide capital towards scaling biochar projects. Insurance in the VCM provides an additional layer of trust through diligence, and confidence for buyers looking to de-risk their purchases. Read more about this Oka, Oregon Biochar Solutions, and GECA project.

[Science Friday] Spotlight on Biochar Podcast Science Friday is an award-winning public radio producer of trustworthy science news and education with nearly 2 million listeners. A recent podcast focused on Clean Maine Carbon's woody biochar project to scale up production while another facility by



Standard Biocarbon, aims to start production in Enfield soon.

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