



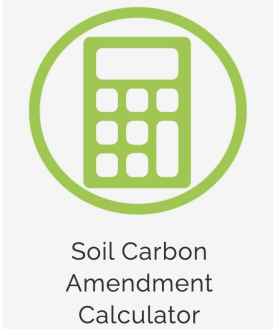
## Transforming Markets, Creating Resilience, Driving Opportunity with Biochar

From the Executive Director

Carbon Dioxide Removal. USBI promotes biochar in carbon markets at events like the upcoming [Climate Week NYC 2024](#). Carbon credits have had a beneficial effect on financing opportunities and on offsetting the expenses associated with the production and distribution of biochar. Biochar producers are still at the forefront of providing carbon dioxide removal credits to international voluntary markets ([cdr.fyi](#)). The process from registration to the issuance of credits can now take anywhere from six to twelve months while Puro.earth adapts to the requirements of the International Carbon Reduction and Offset Alliance ([ICROA](#)). The endorsement by ICROA enhances reliability and trust in carbon markets, which benefits producers and consumers by ensuring transparency and credibility.

USBI explores opportunities to expand new business markets for biochar and co-products that improve our lives. We work with public and private organizations to support the development of products in established markets. We have seen increased interest from suppliers of biochar enhanced fertilizers, soil amendments for the retail garden market, high-value horticultural and field crops, urban soil restoration, grazing and pasture management, building materials such as concrete and asphalt, and the carbonization of biosolids to remove forever chemicals (PFAS, PFOS). USBI supports market development and demonstration through a series of grants, including the removal of hazardous forest fuels, scaling up stormwater facilities in the [Chesapeake Bay](#) to incorporate biochar in Best Management Practices (BMPs), and improving pastures for beef and crop production. We will continue to explore opportunities to expand biochar markets in the coming months.

USBI-USCC. USBI is pleased to work with the [US Composting Council](#) to promote the use of biochar in compost for organic recycling. Most large-scale biochar producers sell biochar-amended products, and many composters are discovering the financial benefits of adding biochar to organic wastes and to finished compost. The combination takes advantage of the best attributes of both materials and opens new opportunities in urban and commercial markets.



[Download Biochar Calculator v.1](#)

USBI / Utah Alfalfa Biochar Trial

USBI helped create the USDA Natural Resource Conservation Service [Code 336](#) Soil Carbon Amendment protocol to help farmers and producers who want to use biochar. We work closely with the NRCS and USDA Agricultural Research Service to address any procedural challenges and facilitate implementation. Easy access to educational materials and support tools, like the [biochar calculator](#), to help farmers and ranchers make informed decisions about using biochar. You can access our [Fact Sheets](#) and guidance documents at [biochar.org](#).

The biochar community has contributed valuable information to various publications in both general and academic media, including books, factsheets, webinars, and workshops. We are delighted to see the recent publication of guidance documents for place-based and mobile carbonizers by the USFS and Kelpie Wilson. The Australia New Zealand Biochar Initiative has released a highly informative Farmers Guide. Johannes Lehmann and Stephen Joseph have recently published an updated third edition of "Biochar for Environmental Management." We frequently exhibit at regional events. With funding from public and private foundations, USBI will soon launch a "Train the Trainers" program aimed at increasing access to biochar information. The USBI collaborates with the USDA ARS to enhance the [Biochar Atlas project with new tools](#) and information. Our Biochar Atlas Webinar Series offers ongoing learning opportunities for both professionals and the general public. Join our next event in October with a presentation on biochar in fertilizers. Watch USBI social media for registration info.

USBI has been making progress in developing a North American laboratory standard for biochar analysis. The goal is to reduce producer costs by aligning methods to allow more [North American laboratories](#) to analyze biochars. We are grateful for the enthusiastic participation of over 25 scientists, producers, and technicians from Canada, Mexico, and the United States with Myles Gray, USBI Program Director, acting as team lead. We collaborate with standards and certifying organizations such as Carbon Standards International (CSI) and the Australia New Zealand Biochar Industry Group (ANZBIG). Certifying organizations will have the opportunity to co-brand the North American standard. International collaboration on standards enhances the credibility and global reach of North American biochar, benefiting our entire industry.

We appreciate the participation of the biochar community in helping our industry grow since our first biochar conference in 2009 with keynote by now Secretary of Agriculture, [Tom Vilsack](#). We had an enjoyable and productive Biochar 2024 conference in Sacramento. Our upcoming [Biochar Conference](#) in Minneapolis in September 2025 represents another opportunity for networking, learning, and advancing biochar technology.

Tom Miles  
Executive Director



## Biochar Legislation Winning Bipartisan Support

### Chuck Hassebrook

*Lead - Biochar Policy Project  
National Center for Appropriate Technology*

The following is an excerpt of [Chuck's comprehensive blog post](#) on the USBI website.



There are not many climate solutions that unite Republicans and Democrats in Congress. But biochar does because it's a practical way to build healthy soils, create new markets for farmers and foresters and remove carbon from the atmosphere.

That bipartisan support is critical because the potential of biochar will not be fully realized without supportive public policy to help the industry to scale -up in time to have the impact we need. Three critical needs should be addressed by policy makers.

- Pass the Biochar Research Network Act as part of the farm bill and provide federal funding for the USDA Agriculture Research Service to conduct coordinated, multi-site research site to test a common set of diverse biochar types in varying soils and circumstances. The research will inform farmers and foresters on which type(s) of biochar will produce positive results in their soils and circumstances.
- Refine NRCS Carbon Amendment Practice Standard 336 by removing the exclusion on biochar produced from crop residue. Standard 336 makes biochar application eligible for USDA conservation payments. It's the most positive policy development for biochar to date. But like many new policies, it needs some refinement.
- Make biochar eligible for the 45Q tax credit for carbon dioxide removal. The tax credit is available for carbon dioxide removal by direct air capture machines, but not biochar. Applying the tax credit to carbon dioxide removed with biochar would provide about \$260 per ton of biochar.

Each of these reforms is under discussion in Washington, prompted by the [Biochar Policy Project of the National Center for Appropriate Technology](#). Each can help scale-up biochar to realize its full potential to build healthy soils and address climate change.

[Read Chuck's Blog Post on biochar.org](#)

[Sign up here](#) to receive updates on the latest policy developments on biochar from NCAT.



NATIONAL CENTER  
FOR APPROPRIATE  
TECHNOLOGY

## 2024 North American Biochar Conference

### Presenter Highlight - Lori Tunstall

#### Colorado School of Mines

## "Feasibility of Biochar as a Cement Replacement to Reduce Concrete's Carbon Footprint"

Meet Lori Tunstall, the Assistant Professor at the Colorado School of Mines, who is leading the field for biochar utilization in cement and concrete.

*"Our approach in our lab has been to replace some of the cement in mortars or concrete with biochar, reducing the demand for cement while also replacing it with a carbon-negative material. Some of the goals of my group have been to see what properties of biochar we need to control to have beneficial use in concrete. We've looked at a broad range of biochars—I've shown 16 here, but we're always looking at more.. What we found is that compared to our control sample, all of the biochars we've tested actually improve strength or keep it the same."*



**Lori Tunstall**

Assistant Professor, Colorado School of Mines

[Download Lori's presentation PDF here](#) and then [watch on YouTube](#). She presented to a packed room.

Explore the USBI Slides & Presentations Archive



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## Remy Wines Tour Biochar Enhanced Cement

Kim Chaffee - USBI Board Member  
In early July, I visited Remy Wines' Winery and Vineyards in Dayton, Oregon. My family made this special visit to see the two year old concrete floor that Solid Carbon Inc. poured with biochar replacing part the climate damaging cement.



The catalyst project for SOLID CARBON and the Drabkin-Mead Formulation, Remy Wines needed to convert an old tractor barn with dirt floors into a winery production space for crafting their Italian varietals.

Knowing the massive impact conventional concrete weighs on our environment, Remy Drabkin sought out SOLID CARBON co-founder John Mead to create a more sustainable solution. Fortunately, John's team were up to the challenge and had excellent results.



According to Solid Carbon's website, "On June 1, 2022, Solid Carbon poured a 5,000 square-foot carbon-negative concrete slab sequestering the equivalent of over 5.1 tons of CO<sub>2</sub> in the floor of Remy Wines. "Wilsonville Concrete Products used iron slag to replace half of the binder in the concrete and used limestone cement...that replaced unbaked limestone in place of some of the cement by 25 percent. By adding the biochar, it completely offset and brought this slab's carbon footprint to negative levels."

Remy Wines was the first commercial winery built with this concrete mix, which has been made open source to enable other sustainably-minded businesses to construct with this carbon-mitigating material. I encourage anyone nearby Dayton, Oregon, to pay a visit to the Remy Wines to see this new wave in biochar fortified floors and enjoy their fine products. As a USBI Board Member I look forward to more innovative climate-friendly biochar solutions like theirs.

*Cheers! Kim*

Project information: <https://www.solid-carbon.com/projects/remywines> Open source documentation: <https://www.solid-carbon.com/tech-resources>

Photos: Copyright - Kim Chaffee - USBI Board Member Image 1: Remy Wines' VP, Gretchen Phelps, showing Kim Chaffee the floor of their "wine cellar" that has been covered with Solid Carbon's biochar-concrete.

Image 2: Heidi Chaffee, Kim's wife, in front of the wine barrels on the biochar-concrete floor of Remy Wine's "wine cellar".

Image 3: Copyright SOLIDCARBON - Remy Wines installation



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## What to Watch

[Biochar's Wildfire Mitigation Potential in the PNW: Insights from C6 Forest to Farm](#) | Presented by International Biochar Initiative, USBI, and C6F2F Description - [Watch on YouTube](#) Recording Date August 20, 2024

[I built this Phoenix from the average human's carbon footprint using Bamboo Biochar](#) | Mini documentary by climate activist artist Benjamin Von Wong [YouTube](#)

[Biochar and Soil Microbiomes](#) | Texas Dairy Matters - Dr. Jeff Brady, Associate Professor, Texas A&M AgriLife Research and Extension Center, Stephenville, Texas, discusses the affects on soil nutrient microbiomes when Dairy Manure Biochar is applied. Watch companion videos [Biochar and Soil Health](#), [Effects of Biochar on Remediation of Emerging Contaminants](#), [Biochar for Controlling Greenhouse Gases](#)

[Unpacking Biochar Production and the State of the Industry](#) | RMS Roller-Grinder's Roy Olson and the USBI's John Webster discuss the biochar production industry and how people wanting to get into this business can proceed. August 19, 2024

Y on Earth with guest Kelpie from Wilson Biochar on Unveiling the Secrets of Biochar [Watch on Youtube](#) - [Listen to the podcast](#)

## LEGION 44 FILM - RELEASE

New documentary film on carbon removal heroes, includes biochar content! Film premiering at NCY Climate Week.

Followed by distribution to major cities and then wide release via online platforms. Narrated by: Walton Goggins  
Produced by: Legion 44  
Watch the film trailer on their site!



## Listen In

**Climate Tech 360 Podcast** with guest Martin Kessler of Flowcarbon making the investment case for biochar! [Project Finance for Carbon Removals](#)

**Carbon Connection Podcast** by Climate Action Reserve [The 2,000-Year-Old-Solution: Biochar](#) Listen on YouTube and Spotify.

Subscribe to John's [Spotify Biochar Playlist](#)

## Join the USBI Directory!

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!

*Welcome to the newest businesses to join our directory!*



Arti - Advanced  
Renewable Technology  
International

Biochar Systems and  
Equipment Manufacturers



Biotech Applied Research

CarbonPilot

Jozaba Grant Services



Mangrove Systems

Myno Carbon

THE Biofoundry

Waste Recovery  
Technologies Carbon-Gas  
(WRT)

Get a Directory Listing!

*Contact [john@biochar-us.org](mailto:john@biochar-us.org) with questions.*

## Reading List

Frontier Climate | Frontier shares their off-take agreement template with the world: <https://frontierclimate.com/offtake-agreement-template>



[The Biochar Phoenix Project](#) Learn about this monumental art installation was created using Bamboo Biochar to highlight the potential of Biochar to combat climate change. | Benjamin Von Wong | <https://blog.vonwong.com/phoenix/>

[Opportunities with biochar from biosolids](#). Recent presentation on biosolids biochar for a PFAS Workshop by NC OneWater in Charlotte, North Carolina. A very productive PFAS awareness workshop. Biosolids biochar was new to most attendees. | Tom Miles USBI



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**The Biochar Handbook**  
A PRACTICAL GUIDE TO MAKING AND USING  
BIOACTIVATED CHARCOAL  
Kelpie Wilson

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## Biochar Events Calendar

*Connect and collaborate at in-person or online events!*

### September - October 2024

September 12

[Teams webinar: Biochar Project Development: Risks & Solutions](#) | Kita & GECA | Engaging conversation on the integration of biochar projects and insurance. [Register here.](#)

September 19

IBI Webinar: [Navigating Carbon Dioxide Removal: The Role of Policy, Regulation, and Value Chains](#) | Explore the rapidly evolving landscape of CDR with focus on biochar, providing the insights needed to navigate the complex intersections of policy, compliance, and value chains. [Register here.](#)

September 20 MNBI CharTalk virtual Teams event "[AI in Biochar Production](#)" 1 PM EST

Find details on the [MNBI LinkedIn page](#). **September 23 - 24**

[NYC CLIMATE WEEK event with USBI & Grain Ecosystem](#) Sponsored by USBI and Grain Ecosystem | Support the premiere biochar climate event at Climate Week! *Location: NYC, NY - [Event sponsorships available.](#)*

September 24 - 26



[Great Plains Biochar Conference](#) Sponsored by The University of Nebraska–Lincoln [Department of Agronomy and Horticulture](#), the [Nebraska Forest Service](#) and the [Nebraska Biochar Initiative](#)  
*Location: Lincoln, NE - [Registration](#)*

October 24-25

[The Golden Gateway to Carbon Removal Pioneers in the Americas](#) | San Francisco - In person conference | Organized by Carbon Unbound - Catch USBI's Myles Gray fireside discussion. [Register](#)


## Looking for biochar industry career opportunities?


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

[Davey Tree hiring biochar production system operator.](#)  
[Harshal Kansara - RIT PhD Candidate seeks biochar position](#)

# MOBILE BIOCHAR PRODUCTION

CharBoss®, the world's first mobile biochar production system converts unwanted wood waste into biochar.



 [GET STARTED](#)

## Partner News: US Composting Council

Learn more about Biochar & Compost Use on [Compost University™](#), a Program of the US Composting Council:

Course: [Use of Biochar and Composted Yardwaste on Citrus and Tomatoes in Florida](#)

A study on the use of biochar and composted yard waste on citrus and tomatoes in Florida. Biochar application in horticulture, particularly in citrus and tomato production, has shown promising results in increasing fruit yields and improving soil quality. Mixing biochar with compost can further enhance its benefits, leading to improved crop production and soil health. To get started with Compost University™ visit <https://www.compostu.net/getting-started/>



# SAVE THE DATE!

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[compostingcouncil.org](https://compostingcouncil.org) / [compostconference.com](https://compostconference.com) / [compostfoundation.org](https://compostfoundation.org)

# Biochar Newsbytes



## Soil-Supplementing, Climate-Boosting Potential of Biochar

Biochar created from organic waste materials could help some farmers increase their crop yields — and fight climate change at the same time.

It's also seen as a promising method of trapping carbon, storing it in the soils where it won't be released into the atmosphere for potentially thousands of years.



Hearty Roots Farm (Photo: Riley Johndonnell)



## Boulder County Announces 2024 Climate Innovation Fund Recipients

High Plains Biochar receives grant to install biochar kilns at up to 15 farms across Boulder County. "I am excited for the opportunity to empower farms in Boulder County by providing them with the technology to remove carbon from the atmosphere while producing biochar from wood waste," - Founder, Rowdy Yeatts.

## Forest Resilience Step 1 - Gather Charred Wood; Step 2 Make and Distribute Biochar to Farms!

The Santa Cruz Preserve is processing dead and charred Redwoods (caused by wildfires) into biochar for use on a local farm. The project is funded by grants from CAL FIRE and from the California State Coastal Commission. [Watch ABC story here.](#)



## Salgenx Uses Bamboo Biochar to Produce Cathodes for Energy Storage





Wisconsin-based Salgen is employing cutting-edge electrolysis techniques to unlock bamboo biochar as a cathode material. The company claims that bamboo biochar lowers production costs while maintaining high performance, making advanced battery technology more accessible.

### Cal Poly University Develops Biochar Generators for Lend/Lease

Cal Poly researchers are partnering with resource conservation districts around the state to seek funds for farmers who need equipment, expertise and labor as they switch to climate-resilient crop varieties, update water management strategies, apply cover crops or begin composting.

Photo: Cal Poly engineering students developing biochar kilns for use by local landowners .



### Missouri Organic Association Plans to Produce and Use Biochar on 76 Farms

Over the next two years, Missouri researchers and farmers will be part of a nationwide effort to see how one organic farming technique can be used at large scales.

« Image courtesy of USDA

### How Does Biochar Perform Under Elevated CO2 Conditions?

One Nanjing University study published this month shows that when biochar is applied under high CO2 conditions, soil nutrient levels are higher than in non-elevated conditions.

Image Source: Natural Science News, 2024 »



### Biochar May Solve Long-Standing Poultry Industry Dangers of Using Chicken Litter as Fertilizer

If "every ounce of that litter that comes out is loaded with carbon, and then it goes into the ground, ... we're making a huge impact on climate change, " says Carbon Chicken Project CEO Jody Hardin.





« Photo courtesy of Channel 5 Fayetteville, Arkansas.

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