

USBI Newsletter March 2021



"America's farmers, ranchers, and forest landowners have an important role to play in combating the climate crisis and reducing greenhouse gas emissions, by sequestering carbon in soils, grasses, trees, and other vegetation and sourcing sustainable bioproducts and fuels." J.R. Biden, Executive Order Jan 27, 2021

## US Biochar Initiative Newsletter

March 2021

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### RACING TOWARD NET-ZERO EMISSIONS WITH BIOCHAR-BASED SOLUTIONS

By Tom Miles, Executive Director



With the support of our community, biochar can propel us toward feeding 9 billion people and reaching net-zero emissions by 2050.

Every day, USBI helps make connections, provides technical and market information, and helps people benefit from biochar. We answer your requests about topics ranging from waste management to producing healthy food, reducing the risk of wildfire, cleaning soil and water, to accessing climate markets which use biochar to cool the planet.

Last week, we welcomed new and prospective producers, advised growers on making and using biochar, and discussed standards and methods with an International Standards Organization (ISO) committee. We also discussed pathways to market for sequestering carbon in roads, improving animal health and productivity in feeds, and managing nutrients in manures and biosolids. In this month's profile, you'll also learn about biochar applications that Minnesota geo-hydrologist, Jim Doten, is using with urban architects, planners, and civil engineers.

Next week, we will explore opportunities for biochar as a coproduct of biomass energy with the US Department of Energy and biomass biofuel and power producers. We will also introduce our **Biochar Policy Task Force recommendations** (See below.) to agencies and legislative committees and show how they support President Biden's executive order on climate.

As a new USBI service, Jeff Waldon will host a monthly biochar roundtable to discuss key issues that are important to you as biochar producers and users. We look forward to your participation (See below.).

Whatever your role in the biochar community, you should add your company to the **USBI Directory** of suppliers and manufacturers, suggest **topics** for our monthly roundtables, and **support** USBI so that we can continue to find biochar-based solutions to our food and climate challenges.



As you can see, our USBI network is buzzing with activity on many fronts, but without your support, this momentum can't be sustained. Please give generously.

**TAKE ACTION**  
**Donate Here.**

----- Monthly Biochar Roundtable Speaker and Networking Series -----



USBI will host a monthly Biochar Roundtable speaker and networking series to discuss common needs and issues such as current and future products, markets,

quality standards, specifications, policy, safety, etc. There will be a 30-minute presentation followed by an open Q & A

session and a chance for you to describe your activities.

Jeff Waldon, managing partner, Restoration Bioproducts, LLC (left) will serve as initial Roundtable facilitator. Waldon is a land management, carbon, biomass energy, timber, and wildlife expert with over 38 years of experience. Restoration Bio-products LLC focuses on bio-energy, carbon capture, and

sequestration using purpose-grown biomass and pyrolysis to produce bio-oil and biochar.

Please send your suggestions for topics and speakers to [usbiochar@gmail.com](mailto:usbiochar@gmail.com).

## MEET A BIOCHAR PRACTITIONER

JIM DOTEN

Environmental Services Supervisor  
City of Minneapolis

**Q** - How did you get started in biochar?

**A** - For me it started in Afghanistan in 2012. I was working for the city then, but got deployed with my National Guard unit. As a geo-hydrologist, I was asked to help poor farmers improve their soils that were depleted of nutrients and carbon. I developed a program for using crop waste to make biochar, but unfortunately, it was late in our mission and the follow-up unit was cut short. When I got home, I brought the idea of using biochar back to our city.

**Q** The programs you have developed in Minneapolis seem to fully deploy the potential of biochar. You cover all the bases, using biochar in urban agriculture and forestry, storm water management, surface water cleanup, landscaping, and remediation of toxic soil. What came first in this work?

**A** Our first project was working with the Shakopee Mdewakanton Sioux Community, who work with other Native Americans who live in the city and are marginalized with limited access to healthy food. The tribe operates the largest organic waste recycling facility in the region, so they have plenty of compost to combine with biochar to use in the community gardens they are developing. It's a good fit because it relates to their traditional practice of smoldering crop waste to produce biochar in the field. Now they are using biochar to help propagate and preserve native seed lines of corn, beans and squash in the Three Sisters planting technique. We are here as a resource for them, but we are not directing the program. We are "on tap," not "on top."

**Q** You have multiple projects addressing storm water management, landscaping and surface water cleanup. How have you managed to do so much in such a short time?

**A** Things were a bit slow to start. I was the crazy guy in the corner bringing up biochar all the time. But when Bloomberg Philanthropy brought people from our City Council and Public Works to visit the Stockholm biochar project, that really helped everyone understand the potential, and started freeing up more resources. Now we have multiple agencies working on incorporating biochar into environmental management at all levels in the city and the region, including the Minnesota Department of Transportation, and the University of Minnesota's Natural Resources Research Institute (NRRI). For instance, NRRI is testing biochar characteristics for us and is helping monitor the pilot projects.

**Q** What are you learning about matching biochar characteristics to applications?

**A** A lot. For instance, we found that biochar on its own won't do much to keep phosphorus out of



Jim Doten and  
Faatemah Ampey

Read about their [Lake Street Beautification Project](#) that uses biochar in planter boxes to help restore a Minneapolis neighborhood damaged by riots.

waterways, but when we combine it with an iron-sand filter, it works really well. We are now exploring biochar characteristics that will work best for removing e-coli from our lakes and streams, as well as organic toxicants such as PFAS. NRRRI is also building a biochar stakeholders network to



An installation using an iron-sand and biochar filter is effective at

removing e-coli from surface water in Minneapolis' "City of Lakes".

define markets, opportunities and barriers. We are really getting a

lot of people on board with biochar in this state.

**Q** What is next for the city and for you?

**A** My current big project is to get local biochar production going. There are no commercial biochar producers in the state. We are in the early stages of an innovative district heating project that would use the heat generated by biochar production to augment a ground source heat pump system. As for me, I went from spending 20% of my time on biochar to about 50% now. My goal is to make sure we have at least one full time position in biochar in the Department of Health. I want this program to continue and grow after I retire.

----- Biochar Policy Task Force Recommendations -----

USBI has joined farm, forest, scientific, and environmental organizations to recommend policies which promote the production and use of biochar to achieve the natural resource and climate goals of the new administration. Please review the recommendations below and send your comments to the USDA. See: **USDA Requests Information on USDA's Climate-Smart Agriculture and Forestry Strategy.**

## Biochar Policy Recommendations to Address Rising Carbon Dioxide Levels

### What is biochar and why now?

Biochar from forest and prairie fires is already a significant part of the organic matter in most soils. Biochar is produced by pyrolysis, heating biomass in the near absence of oxygen. Applied to soil, it can sequester carbon for thousands of years, reduce nitrous oxide and methane emissions and build soil. Its potential biobased coproducts include low carbon fuels for jet aircraft, heating oil and bio asphalt.

### Farm and Climate Opportunity

"Biochar with safeguards" was ranked as the strategy with the highest soil carbon sequestration potential in the Proceedings of the National Academy of Sciences of the US Natural Climate Solutions (Griscom, et. al.). Biochar's potential is cited in the Intergovernmental Panel on Climate Change (IPCC) 2018 Special Report.

Biochar can benefit farmers and foresters by creating new markets, improving soil health and productivity and increasing soil water holding capacity to absorb heavy downpours and protect against drought. Furthermore, biochar can provide the basis for a new rural industry producing biochar, biofuel and biobased products. That potential new industry offers good jobs for rural people and new markets for sustainably-harvested biomass crops, crop residue and excess slash removed from forest to reduce wildfires.

### BIOCHAR POLICY RECOMMENDATIONS

Make NRCS interim practice standard 808 permanent to provide payments for soil applied biochar

- Refine 808 to allow for biochar produced from sustainably sourced non-woody biomass, including crop residue removed in accordance with an NRCS conservation plan.
- Make 808 biochar practices eligible for CSP and prioritize them for Conservation Innovation Grants.

Establish a national 10-year, multi-site program of coordinated research with ARS and land-grant universities

- Develop new knowledge to predict the effect of biochar on soil health, carbon sequestration and greenhouse gas emission accounting for variations in biochar, soil, climate, and other factors.
- Refine promising uses of biochar by region to increase productivity and profitability and improve soil and plant health while sequestering carbon and reducing greenhouse gas emissions.

Support development of a new industry producing biochar and its coproducts

- Support and expand biofuel tax credits and existing USDA and DOE biofuel programs.
- Provide DOE grants for five pilot pyrolysis plants producing biochar and biofuel or biobased products.
- Include pyrolysis derived fuels in setting volumetric targets for cellulosic biofuels.

### Contact:

Beverly Paul ([bpaul@gordley.com](mailto:bpaul@gordley.com)) or Chuck Hassebrook ([hassebrook@gmail.com](mailto:hassebrook@gmail.com))

### USBI YouTube CHANNEL NOW HAS MORE THAN 50 VIDEOS!

All videos on our channel are fresh, new material from recent conferences and webinars. Watch presentations on all your favorite biochar topics and applications including: storm water management, mine reclamation, big box biochar, home gardening, vermicompost, carbon markets, pollution clean-up and more....

### GET ANSWERS WITH OUR SEARCHABLE DATABASE

Our USBI Learning Center's search function gives you the power to search on a range of biochar topics by media type. This is the place to get quick, accurate, and reliable answers to your burning questions.

Don't forget to Like, Share and Subscribe!



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### ANNOUNCEMENTS AND OPPORTUNITIES

#### ----- Wilson Biochar Kiln Cost Share Opportunity -----

Thanks to a generous individual, Wilson Biochar has received a gift that will allow them to subsidize the cost of the Ring of Fire Biochar Kiln for 10 to 15 deserving applicants located in the continental US. If you represent a community group, local non-profit, or a disadvantaged small business that would like to have a Ring of Fire Biochar Kiln, but cannot afford the entire cost of purchasing and shipping, you are eligible to apply for this cost-share subsidy. The application period runs from March 15 to April 30, 2021. More information and [application form](#) is available at [WilsonBiochar.com](http://WilsonBiochar.com).

#### ----- New, Enhanced USBI North American Biochar Directory -----

##### **Join the Directory - Get your free biochar listing now!**

USBI's new searchable directory includes biochar suppliers, equipment manufacturers, researchers, consultants and organizations.

- Help customers find your business.
- Find out who needs your services.
- Discover organizations that are working on biochar solutions.

Join the directory and use it to connect with the North American biochar network.

Make it easier for others to find out about your biochar company or project. Be sure to fill out as much as you can about your sector, products, applications, technology, and the scale of your operations.

*Together we are putting the world's carbon budget back in the black and building the most comprehensive biochar directory for the US market!*

Once you enter your information, you will be taken to a donation page. We ask for a suggested contribution of \$25 annually for your directory listing. Please give more if you can afford it. Your contribution helps to keep the USBI website alive and growing!

Add your USBI listing - [HERE](#). After review, your listing will be published in the USBI Biochar Directory.

#### ----- Redwood Forest Foundation Symposium Webinar Now Available -----

Watch "Biomass to Biochar and Storing Carbon in the Forest Soils, with Virtual Demonstration of Biochar Production in the Forest". [View here](#).

### ROLLING OUT THE GREEN CARPET FOR NEW USBI DIRECTORY MEMBERS

Welcome to the new directory members below - we are glad to have your listings in our USBI Directory!



Waste To Energy, Inc.  
Oregon Biochar Solutions  
Glanris



Carbo Culture  
American BioChar Company  
Wakefield Biochar



MuniRem Environmental, LLC  
Green State Biochar  
GO Biochar

### BIOCHAR EVENTS CALENDAR

**March 24 EDT - Center for Watershed Protection Webcast Series - Biochar in the Urban Landscape** Ecotone VP Chuck Hegberg speaks on how biochar can be used in urban landscapes. [Register here.](#)

**April 7, 4 pm - April 9, 12:30 pm MDT University of Arizona Gila County Cooperative Extension - Biochar Opportunities in the Southwest** [webinar Register here.](#)

**April 27, 6 - 7 pm PST Oregon West Multnomah and Tualatin Soil & Water Conservation Districts - Biochar: An Ancient Amendment and Its Modern Day Applications** [webinar Register here.](#)

## BIOCHAR NEWSLINKS

► **[Ag Waste Can Build a California Carbon Sink.](#)** Iowa-based technology company Frontline BioEnergy proposes to convert about 300,000 tons per year of nut shells and ag waste and turn it into natural gas equivalent to 21 million gallons of gasoline. It would also generate an estimated 125 tons per day of biochar, a versatile byproduct whose uses may include fertilizer.

► **[Tracking Down the Waste in Canada.](#)** A new biomass tracking project from Agri-food traceability firm TrustBIX, will divert material from landfill, and help produce quality biochar. Tracking the source, characteristics, and use of various waste streams supports biochar product quality, production practices, suitability for specific applications, and pricing in various markets. Tracking also helps determine the climate impact of the waste diversion.

► **[High Value Waste -Thermal Processing of Hemp Waste Produces Potentially Valuable Compounds.](#)** Researchers identified potentially valuable molecules in hemp hurd (parts of flax that adhere to fiber) liquid distillates. The team showed that the concentration of compounds varied hugely in different distillates. The compounds of interest appeared mainly in three different hemp hurd samples, especially from the torrefaction and pyrolysis phase distillates condensed below 100 °C.



► **[Australian Biochar Start-up Inspires Microsoft's Negative Carbon Plan](#)** Melbourne-based Rainbow Bee Eater, has caught the attention of tech colossus Microsoft, which bought a large number of the project's carbon credits over Finnish carbon removal marketplace Puro.earth. Founder Peter Burgess believes interest from the likes of Microsoft and Canadian e-commerce company Shopify, which has also bought credits, will make all the difference to biochar business viability.

◀ In the South Australian town of Tantanoola, just down the road from the Lake Bonney wind farm, a small herb-growing company Holla Fresh is conducting a cutting edge experiment in carbon sequestration and off-grid energy generation.

► **[Clean Air Activists Study Biochar as Alternative to Local Burning.](#)** In Colorado, Clean-air activists are exploring whether vegetative material that goes up in smoke through local agricultural burning could instead be converted to biochar, reducing air pollution and boosting agricultural production.

► **[Clean Air Concerns around a Proposed Pyrolysis Plant.](#)** Citizens of Newark, New Jersey are carefully scrutinizing a proposal to build a new industrial facility to pyrolyze biosolids. Aries Clean Energy will need to convince residents that their plant will not add to an already heavy burden of pollutants.

► **[Is Pyrolysis Cleaner than Burning?](#)** That is one question that citizens asked the North Carolina Department of Environmental Quality's Division of Air Quality regarding the permit application by International Tie Disposal, which hopes to open a pyrolysis plant near Raleigh.

► **[If You Can't Eat It, Char It.](#)** A troubled ethanol plant near Mead that has been sued by the state for possible pollution has started "charring" thousands of tons of distilled seed corn in hopes of eliminating the hazardous chemicals the corn contains. The Nebraska Department of Environment and Energy said it will be sampling the charred corn to determine whether the charring process has destroyed the harmful chemicals.

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

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Ring of Fire Biochar Kiln Specifications	
Kiln diameter (with heat shield)	77 inches
Kiln height (with heat shield)	44 inches
Kiln total volume:	3 cubic yards
Kiln weight (fully assembled)	240 pounds
Number of kiln body sections	3
Weight of one kiln body section	40 pounds
Burn time to make 1 cubic yard biochar	4 hours

For more information, please visit [WilsonBiochar.com](http://WilsonBiochar.com).

STAY CONNECTED



Visit [Biochar-us.org](http://Biochar-us.org) for more information.

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