



Wood Pathway: Biochar

A well-known product of Sonoma County, biochar is a specialized form of charcoal that is produced using high heat in low-oxygen environments. It is commonly used as a soil amendment with wide-ranging benefits such as increasing crop yields, retaining water and increasing carbon sequestration on natural and working lands. While early in its incorporation to commercial markets, biochar has a growing cadre of research in California and around the world as an important waste management solution for excess forest vegetation. It has the potential to be a **carbon negative strategy** with some calculations estimating 4-9 million tons of CO₂ sequestered in California through wide-applications of biochar. Other co-benefits include:

- A water filtration solution for urban and agricultural wastewater
- A solution for improving tree vigor and health in urban landscapes
- A solution for abandoned mine lands remediation
- A solution to reduce enteric methane release in cattle
- A solution for improving asphalt
- A catalyst to bring together communities to help meet zero-waste and sustainability goals, reduce landfiling, and create good jobs in both rural and urban settings!

New technologies that can convert previously wasted or underutilized forest residues into high quality and sustainable bioenergy and useful bio-based products are emerging. By using biomass conversion technologies we can add value to residues in the field while significantly reducing transportation costs.



"A range of inexpensive low-tech methods and techniques also can be employed to convert 'waste' biomass effectively and efficiently into biochar. These include simple earthen kilns, flame-cap kilns, KonTiki kilns, use of conservation burns, or other inexpensive alternatives suitable for small or medium-scale land owners and land managers with limited budgets. When used correctly, these methods produce significantly lower smoke pollution than a typical open burn pile and produce high-carbon biochar."

Available Grant Opportunities

California Climate Investments

Since 2017, 9 biochar projects were funded through the Forest Health, Climate Change Research and the Fire Prevention Grant.

<https://www.arb.ca.gov/cc/capandtrade/auctionproceeds/auctionproceeds.htm>

State Water Efficiency & Enhancement Program (SWEET) (DWR and CDFA) -

<https://www.cdca.ca.gov/oefi/sweet/>

Healthy Soils Program –

Has received \$40 million in funding from the CCI from 2016-2019 and an additional \$10 million from the Outdoor Access for all Act of 2018

<https://www.cdca.ca.gov/oefi/healthysouls/>

Sustainable Agriculture Lands Conservation Program - Department of Conservation

In 2018-19 awarded over \$55 million in projects throughout the state

<https://www.conservation.ca.gov/dlrp/grant-programs/SALCP>



Pictured above is the pyrolysis operation run by the Redwood Forest Foundation in Piercy, California in 2017. Tan oak was harvested from overcrowded areas of the Usal Forest and converted to high-quality biochar, then sold into the local community as a soil amendment.

Case Study

James Baskin's Lems Ridge Project

Sonoma Biochar Initiative, along with Kelpie Wilson of Wilson Biochar Associates, collaborated on a plan to convert fuels reduction materials culled from property owned by James Baskin and his wife in Del Norte County. This involved presenting the biochar story to the local air quality management district to gain a permit for small-scale biochar production using Kelpie Wilson's Oregon Kilns, assessing the property for its fuels reduction potential, training James' workers on proper kiln operation, and supporting his application for a new NRCS Conservation Activity that will rebate landowners \$4800 per acre to perform fuels reduction work and produce biochar instead of open burning the material.