



CONSERVATION ENHANCEMENT ACTIVITY
E384135Z

CONSERVATION
STEWARDSHIP
PROGRAM

Biochar production from woody residue

Conservation Practice 384: Woody Residue Treatment

APPLICABLE LAND USE: Forest, Associated Ag Land

RESOURCE CONCERN ADDRESSED: Degraded Plant Condition

PRACTICE LIFE SPAN: 10 years

Enhancement Description

Utilizes woody debris remaining after fuel reduction harvests or wildfires to create biochar. Biochar stores carbon and is a useful soil amendment that improves SOM and water-holding capacity.

Criteria

- States will apply general criteria from the NRCS National Conservation Practice Standard (CPS) 384 as listed below, **and additional criteria as required by the NRCS State Office.**
- The enhancement will be applied to sites where woody debris presents a fire risk or interferes with land management objectives or planned activities (e.g., impedes regeneration, limits access, interferes with livestock movement, etc.).
- Woody debris that does not have a commercial use is suitable for biochar creation.
- Where this enhancement can be coordinated with a fuel reduction treatment, woody debris should be separated by size classes if possible.
- Biochar will be created on site in kilns designed for the purpose.
- Kiln operators shall be properly trained in procedures for creating biochar, and shall adhere to safety precautions at all times. A plan for quenching biochar will be in place



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prior to lighting kilns, and the capability for quenching will be maintained during firing and while the char is cooling.

- Biochar may be spread in the forest to enrich soils, or used elsewhere on the operation.
 - Biochar may be spread in forests using equipment such as a bucket loader on a tractor, or a manure spreader. It is best to spread biochar just before the start of a moist season. Incorporate biochar into the forest floor or mix with an organic material (e.g., manure, compost, etc.) before spreading, where possible.
 - If applying biochar to agricultural fields, apply in appropriate amounts based on soil analyses of the fields, and an analysis of typical biochar produced within the geographic area and forest type.
 - Biochar may be used in manure treatment (e.g., to reduce odors in barns, as an amendment in manure composting, etc.).
- Care shall be taken to minimize impacts on residual plant communities during biochar creation.
- Timing of biochar creation shall coincide with periods of low fire risk.
- Any residual woody material left on the site after treatment will not present an unacceptable fire, safety, environmental, or pest hazard. Such remaining material will not interfere with the intended purpose or other planned management activities.
- The use of woody material to create biochar shall not be detrimental to the site. Soil and water resources will be protected during the activity. Adequate woody material will be left to maintain wildlife habitat. Activities will be consistent with established regulations and guidelines for Woody Biomass Retention and Harvesting, if available.
- Activities will be consistent with established regulations and guidelines for PM10 and PM2.5 emissions, ozone precursors (NO_x and VOCs), as well as smoke and fugitive dust, and state and local permit requirements.
- Secure all necessary approvals and permits prior to conducting biochar creation. Burning permits may be required.



- Access by vehicles or people will be controlled during biochar creation for safety.

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Documentation Requirements

- Plans and specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, implementation requirements, technical notes and narrative statements in the conservation plan, or other acceptable documentation.
- **Additional documentation as required by NRCS State Office.**