

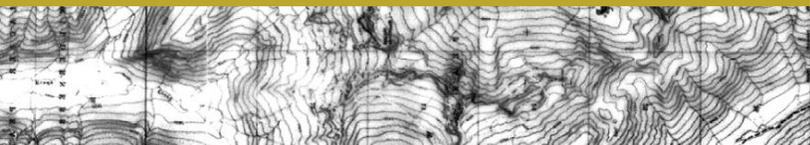
Biochar and Scotch Broom Pyrolysis Project



OLYMPIC WEED WORKING GROUP
FALL MEETING

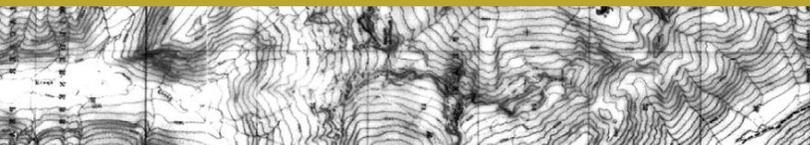
November 13th, 2019

Jill Silver & Jim Heuring
10,000 Years Institute



10,000 YEARS INSTITUTE
watershed ecological services

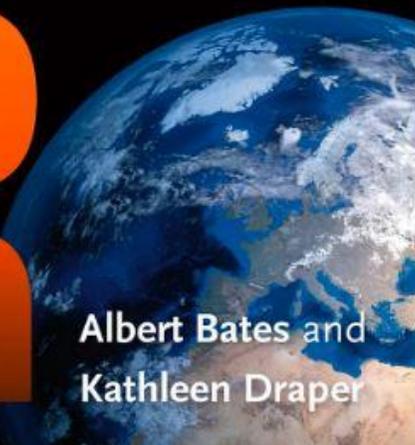
Scotch Broom Ecological Impact Study and Pyrolysis POC Project



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BIOCHAR: Harnessing carbon to help solve the climate crisis

BURN Using Fire to Cool the Earth



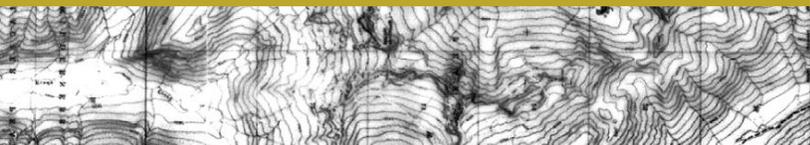
Albert Bates and
Kathleen Draper

www.chelseagreen.com/product/burn

Moving carbon from wasted sources into soils and agricultural systems to:

- rebalance the carbon, nitrogen, and related cycles
- enhance nutrient density in food
- rebuild topsoil
- condition urban and agricultural lands to withstand flooding and drought
- cleanse water by carbon filtration and trophic cascades within the world's rivers, oceans, and wetlands
- shift urban infrastructures to incorporate drawdown materials and components, replacing steel, concrete, polymers, and composites with biological carbon to drive economic reorganization by incentivizing carbon drawdown

Fully developed this approach costs nothing—to the contrary, it can save companies money or provide new revenue streams.



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BIOCHAR: Harnessing carbon to help solve the climate crisis



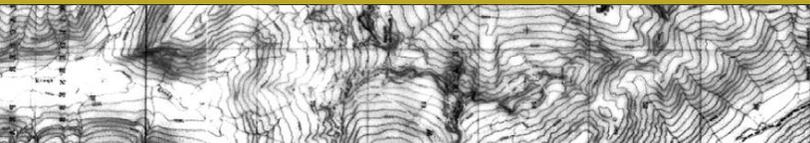
Biochar: The science behind the hype



Kurt Spokas

Research Soil Scientist

USDA/ARS – St. Paul, MN



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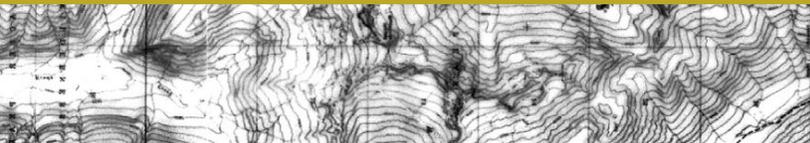
watershed ecological services

Pyrolysis with Top-lit Updraft Gasifier (TLUD)

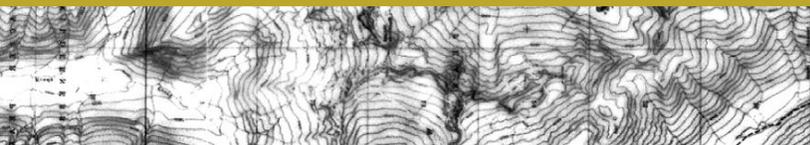


← **Norm Baker**

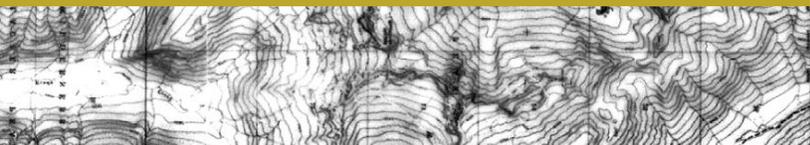
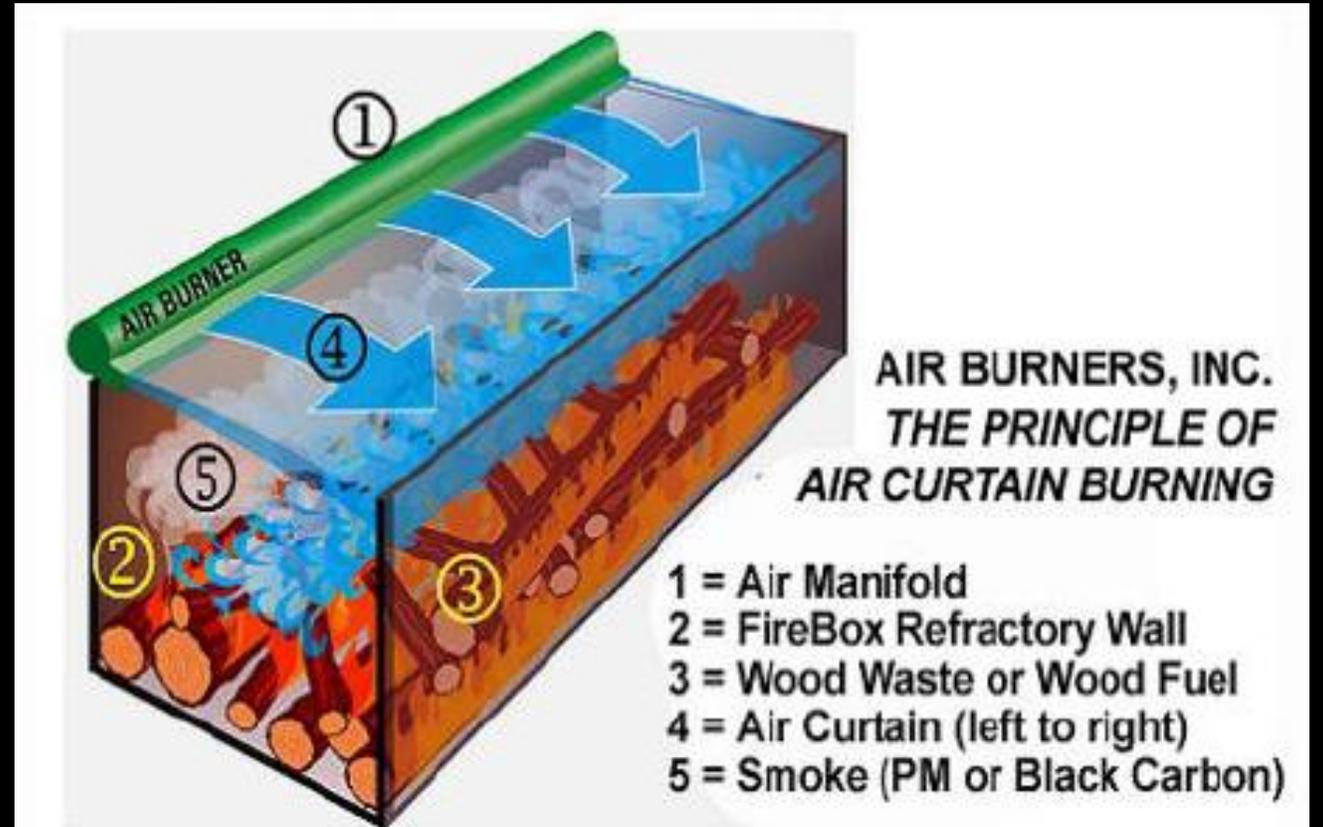
- Developed TLUD models
- Demonstrated how models make biochar



Pyrolysis with Top-lit Updraft Gasifier (TLUD)



Air Burner's Trailer-Mounted Firebox



Scotch Broom Ecological Impact Study



Questions of interest:

- Is Scotch broom arresting the succession of riparian communities?
- What factors are limiting riparian plant establishment and growth in areas where Scotch broom occurs?
- Do soil legacy effects of Scotch broom limit riparian plant establishment and success?

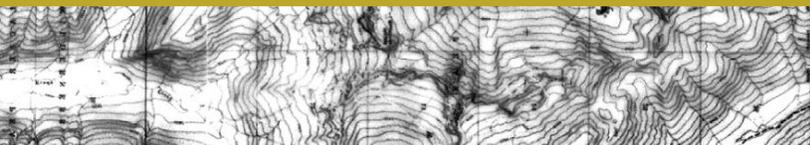
Partners:



UNIVERSITY OF CALIFORNIA
SANTA CRUZ



The Nature
Conservancy



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Scotch Broom Ecological Impact Study



Study design

- 280 Plots
- 4 Hoh River sites
- Comparing alder and willow growth in areas invaded and uninvaded with Scotch Broom

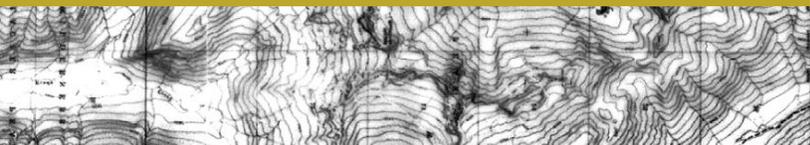
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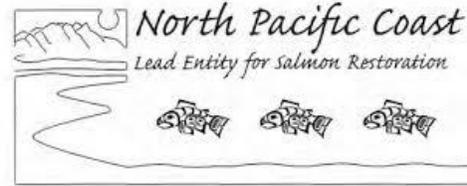
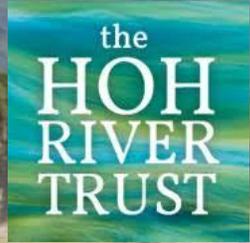
The Nature
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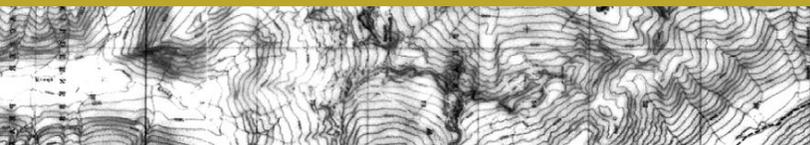
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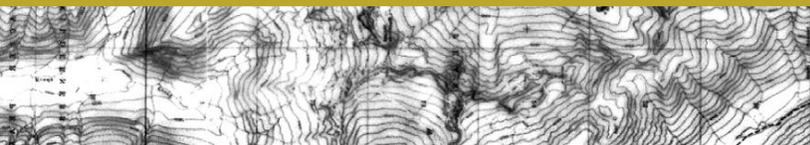
10KYI's Partners and Collaborators



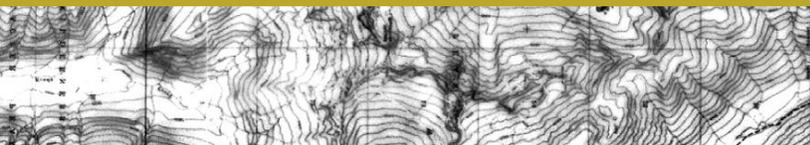
Scotch Broom Drying Piles



10KYI Restoration Technicians Treating Scotch Broom

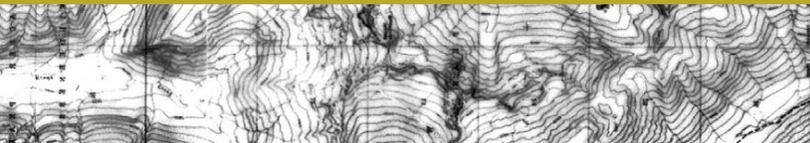


10KYI Restoration Technicians Treating Scotch Broom



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10KYI Restoration Technicians & Volunteers Scotch Broom Treatment



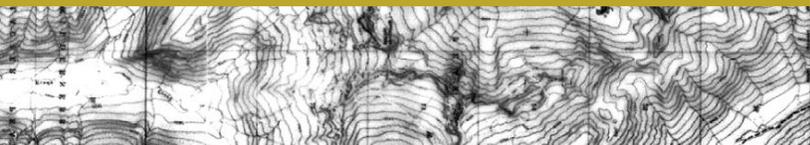
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Use color for emphasis



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