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Biochar production and application in the Intermountain West

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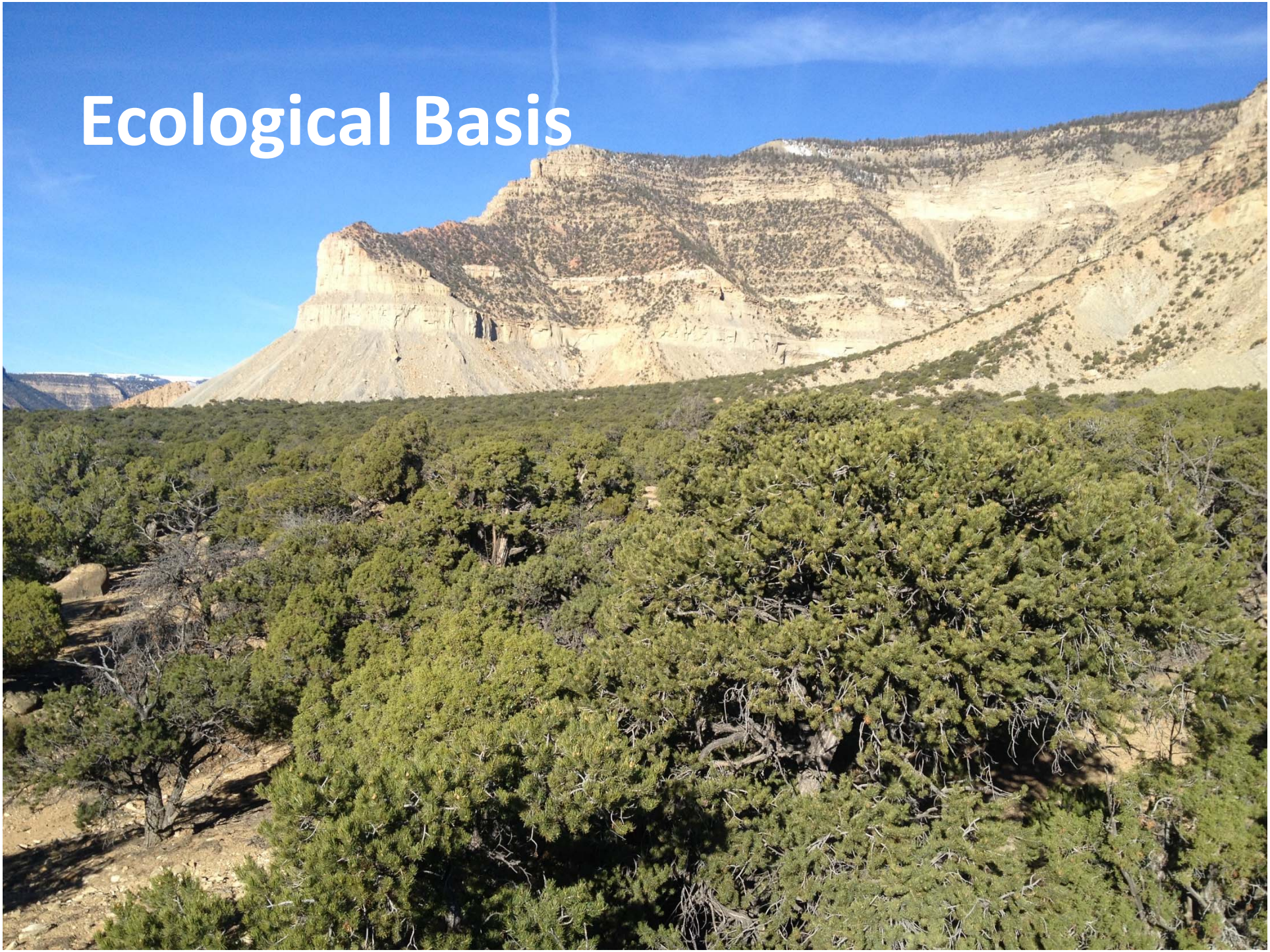
COOPERATIVE EXTENSION

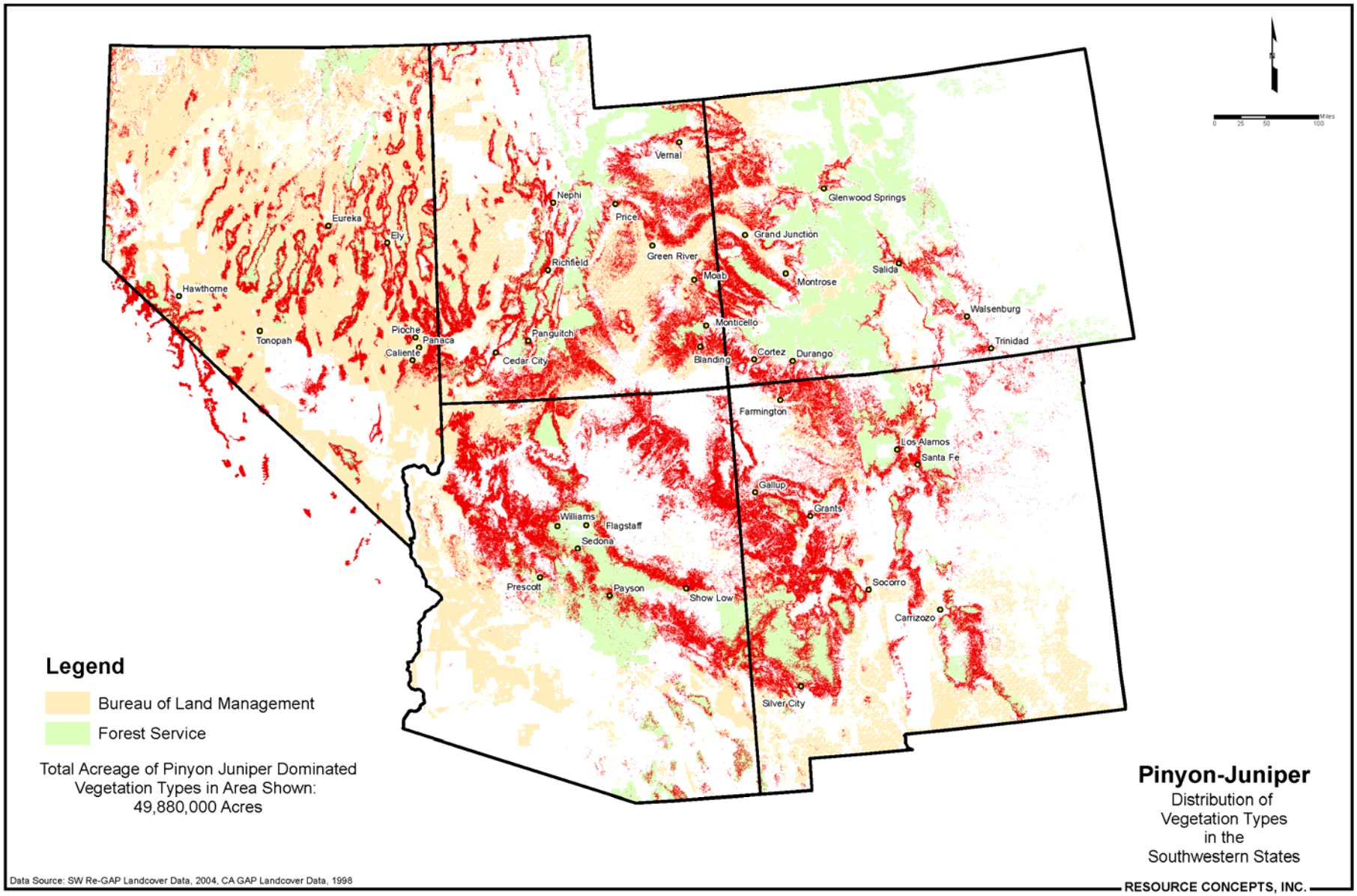
Utah Department of
Agriculture and Food

Amaron Energy


Overview
• Mobile Pyrolysis
• Ecological Basis
• Challenges
• Flame-Cap Kilns
• Application

Ecological Basis




Vernal
Nephi
Price
Glenwood Springs
Eureka
Ely
Grand Junction
Green River
Richfield
Salida
Moab
Montrose
Hawthorne
Walsenburg
Monticello
Pioche
Panaca
Panguitch
Tonopah
Trinidad
Caliente
Cedar City
Blanding
Cortez
Durango
Farmington
Los Alamos
Santa Fe
Gallup
Grants
Williams
Flagstaff
Sedona
Prescott
Payson
Show Low
Socorro
Carrizozo
Silver City
Legend
Bureau of Land Management
Forest Service
Total Acreage of Pinyon Juniper Dominated Vegetation Types in Area Shown: 49,880,000 Acres
Miles
0 25 50 100
Pinyon-Juniper
Distribution of Vegetation Types in the Southwestern States
Data Source: SW Re-GAP Landcover Data, 2004, CA GAP Landcover Data, 1998
RESOURCE CONCEPTS, INC.

2013

YUKON
NORTHWEST TERRITORIES
B.C.
ALBERTA
SASK.
MANITOBA
ONTARIO
Boreal Forest
Edmonton
Vancouver
CANADA
UNITED STATES
Seattle
WASH.
Seeley Lake
Missoula
MONT.
OREG.
S. DAK.
YELLOWSTONE NATIONAL PARK
MT. RUSHMORE NATIONAL MEMORIAL
Black Hills
Custer
Yankee Fork Salmon River
IDAHO
WYO.
NEBR.
NEV.
San Francisco
UTAH
COLO.
Wolf Creek Pass
Los Alamos
BANDELIER NATIONAL MONUMENT
CALIF.
ARIZ.
N. MEX.

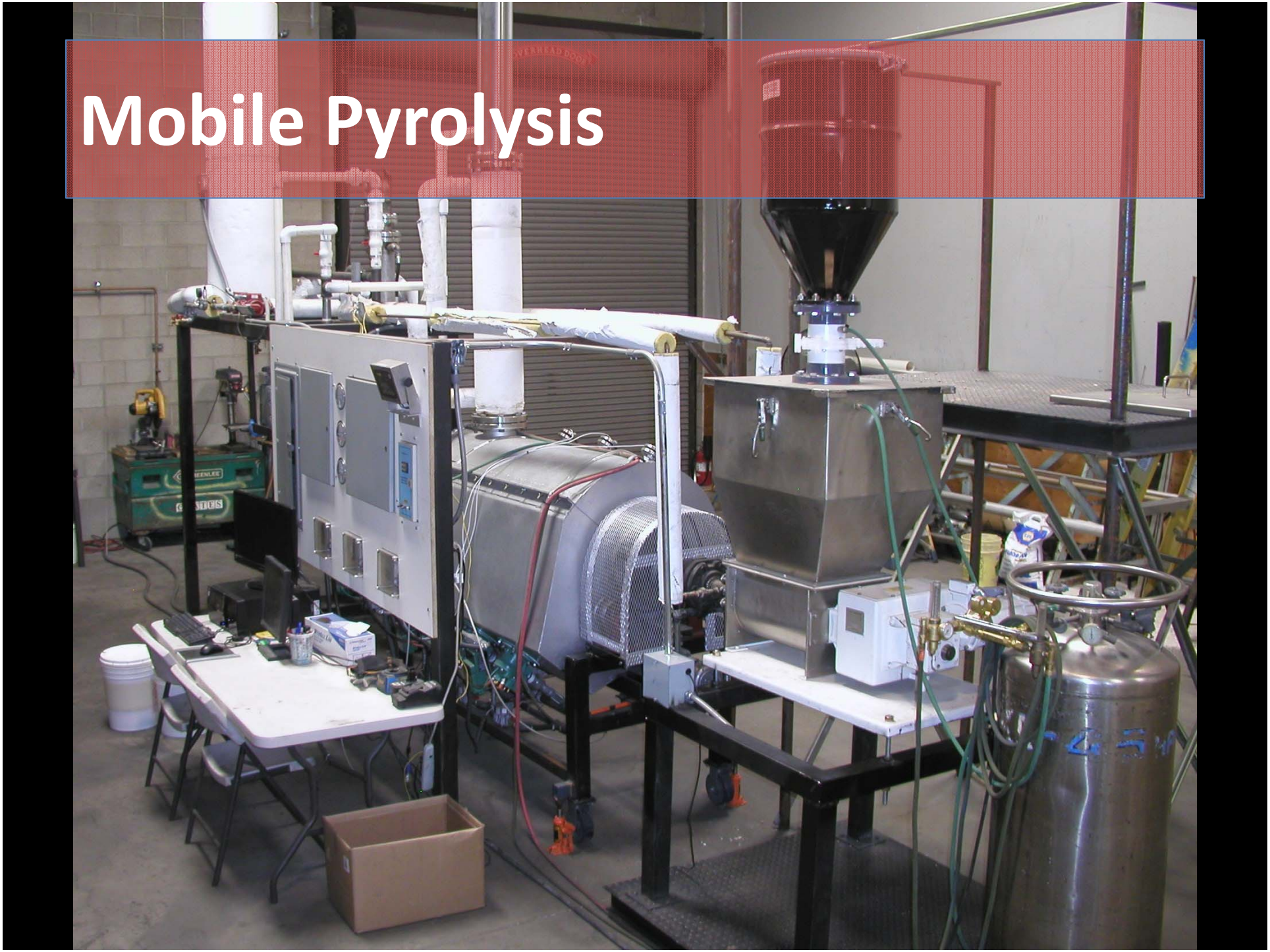
THE BEETLE AND ITS HOSTS

- Mountain pine beetle occurrence
- Lodgepole pine range
- Jack pine range
- Other pine species

0 mi 200
0 km 200

MARTIN GAMACHE, NGM STAFF; SHELLEY SPERRY. SOURCES: CANADIAN FOREST SERVICE; BARBARA BENTZ AND JEANINE PASCHKE, U.S. FOREST SERVICE; AARON MCGILL, ALBERTA ENVIRONMENT AND SUSTAINABLE RESOURCE DEVELOPMENT; TIM EBATA, BRITISH COLUMBIA MFLNRO; ALLAN CARROLL, UNIVERSITY OF BRITISH COLUMBIA; BRIAN AUKEMA, UNIVERSITY OF MINNESOTA

Mobile Pyrolysis




PENSKE
Truck Rental
Wood
Fuel


MAGNEHELIC
BURNER AIR
MAGNEHELIC
C1 VACUUM
MAGNEHELIC
KILN VACUUM
VAC PUMP
BURNERS
PLANAR
RPM 1 3274
17:55: 27
NEC


WT-6390

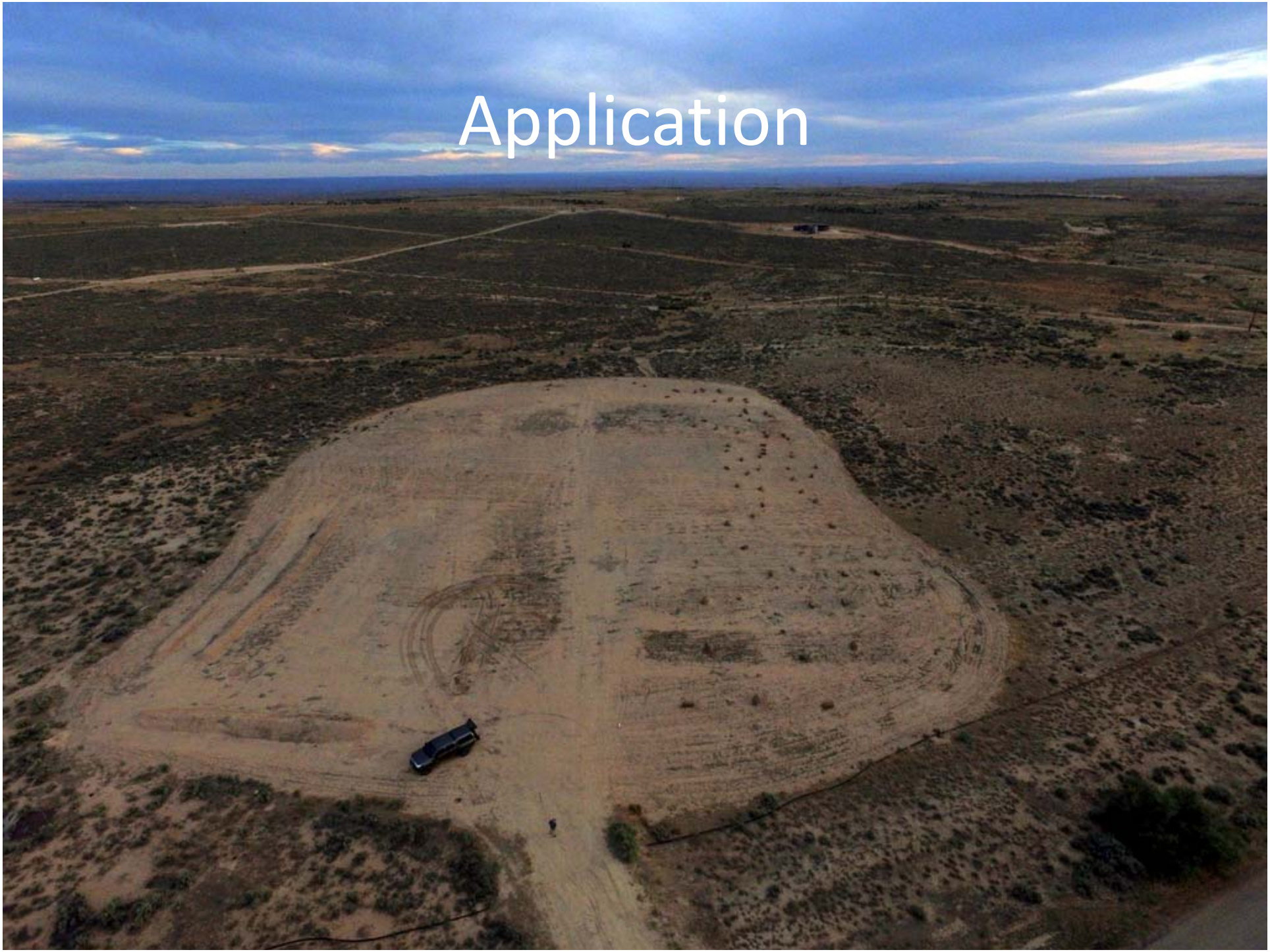
Challenges

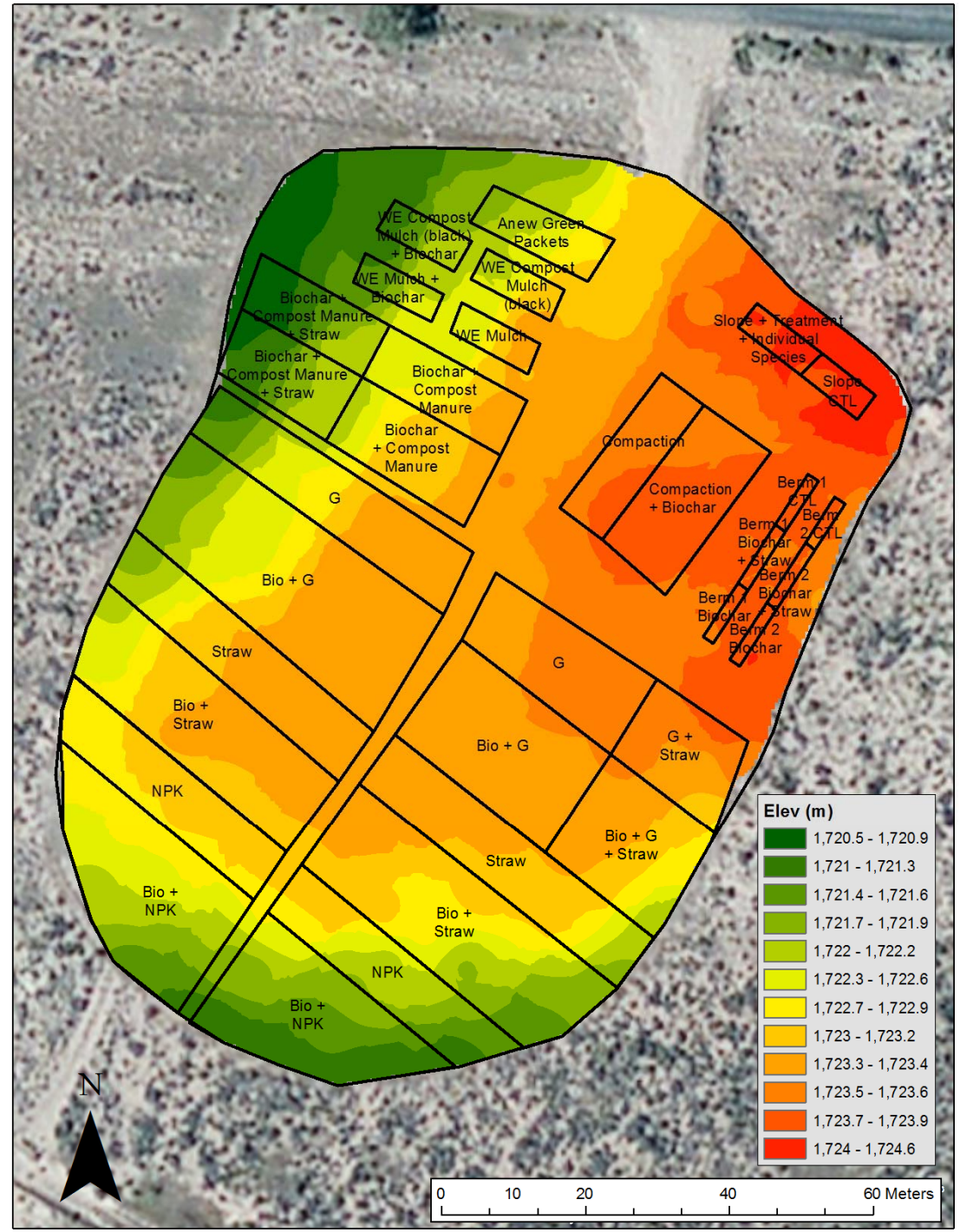

SPORT
Sunblock
Lotion
16 fl. oz.

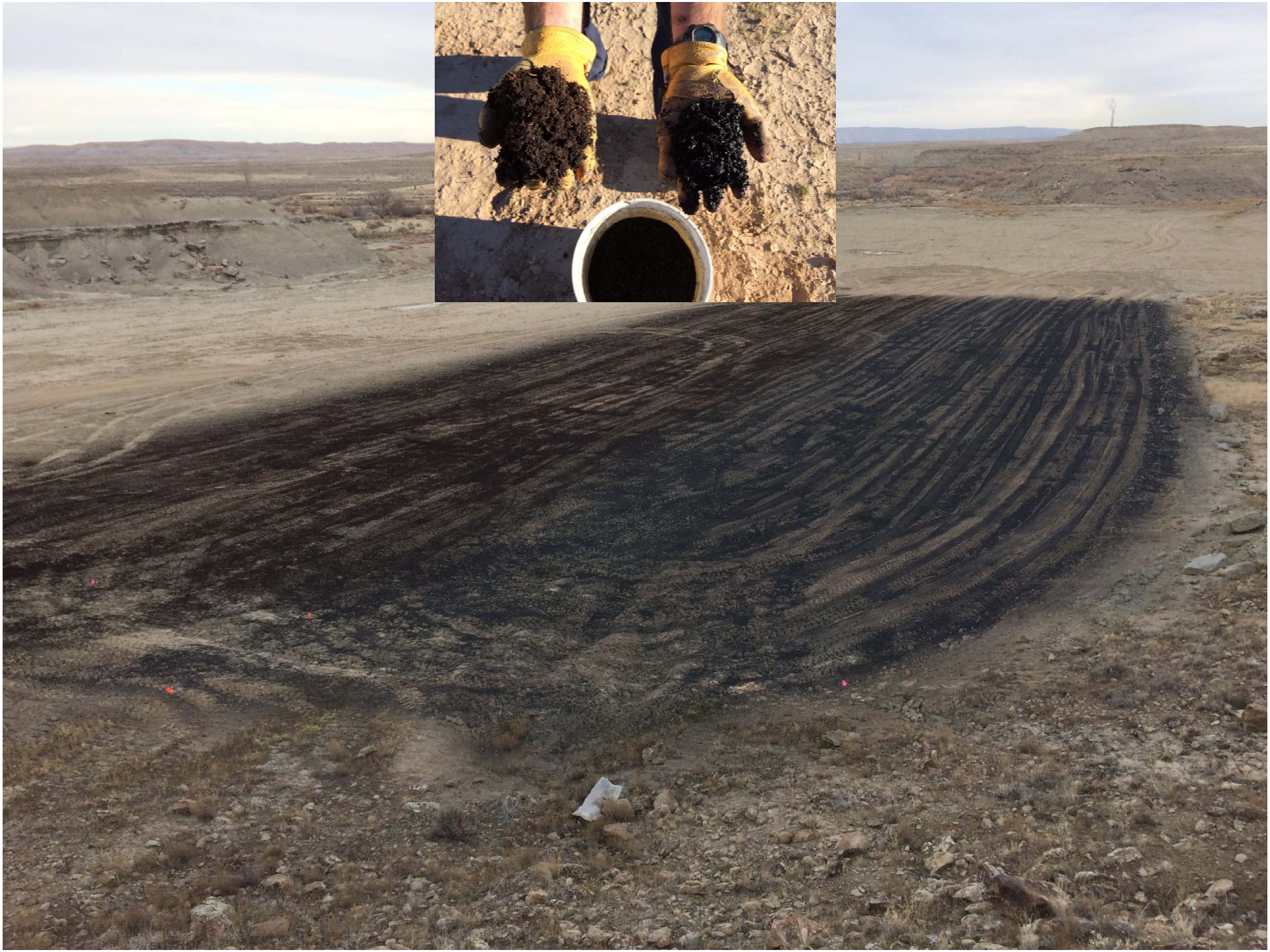
Flame-cap Kilns


POLAR

Application




WE Compost Mulch (black) + Biochar
Anew Green Packets
WE Compost Mulch (black)
WE Mulch + Biochar
WE Mulch
Biochar + Compost Manure + Straw
Biochar + Compost Manure + Straw
Biochar + Compost Manure
Biochar + Compost Manure
Slope + Treatment + Individual Species
Slope CTL
Compaction
Compaction + Biochar
Berm 1 CTL
Berm 2 CTL
Berm 1 Biochar + Straw
Berm 2 Biochar + Straw
Berm 1 Biochar
Berm 2 Biochar
G
Bio + G
Straw
Bio + Straw
NPK
Bio + NPK
G
Bio + G
G + Straw
Straw
Bio + G + Straw
Bio + Straw
NPK
Bio + NPK
N
Elev (m)
1,720.5 - 1,720.9
1,721 - 1,721.3
1,721.4 - 1,721.6
1,721.7 - 1,721.9
1,722 - 1,722.2
1,722.3 - 1,722.6
1,722.7 - 1,722.9
1,723 - 1,723.2
1,723.3 - 1,723.4
1,723.5 - 1,723.6
1,723.7 - 1,723.9
1,724 - 1,724.6
0
10
20
40
60 Meters

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