What’s Baking?: Culinary Techniques of the Archaic Chefs in the Southern Black Hills

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Abstract

This presentation will consider the configuration, use, and implications of rock filled roasting/baking features utilized by peoples of the Late Plains Archaic and Prehistoric periods in the Southern Black Hills of South Dakota.

284 FCR Features/Hearths were discovered on 34 archaeological sites in Southwestern Custer County, South Dakota. Of these, 77 were carefully excavated or cross-sectioned. Geomorphological investigations, ethnobotanical analysis, fatty acid residue studies, radiocarbon dating and other analytical techniques were completed to enhance this research.
Ecotonal Setting
Southwestern Custer County, South Dakota
Types of FCR Features/Hearths

- Shallow Basin Style
  - Rock Griddles
  - Warming Fires
- Deep Basin Style
  - Earth Ovens
- Stone-Heating/Boiling Complexes
- Unlined Hearths

39CU584 Hearth C - Shallow Basin
Shallow Basin Style

- Rock Griddles & Warming Fires
  - Faunal Remains (Burned Bone)
  - Proximity to Meat Procurement Areas
  - Proximity to Water Sources
  - Protection from Natural Elements
  - Typically Less than 1 meter in Diameter
Rock Griddle/Warming Fire
Deep Basin Style

• Earth Ovens
  – Typically Larger and More Voluminous than Warming Fires and Rock Griddles (<1 Meter - 3 Meters)
  – Deep Basin to Allow for Sufficient Cooking Space
  – Layered Nature of Rocks, Charcoal, and Residual Plant Matter/Faunal Remains
  – Lack of Oxygen in Covered Earth-Ovens Results in Presence of Large Amounts of Burned Wood/Charcoal

39CU586 - Hearth U - “Cylindrical” Deep Basin - 1520 +/-70 YBP
Deep Basin Style - Profile
Deep Basin Style - Earth Oven

Dashed Line
Indicates Soil
Cap/Charcoal
Staining Boundary
Stone Heating/Stone Boiling Complexes

- Side-by-Side Hearths
- Discarded Rock Concentrations in Intact Settings
- Possibly Used to Heat Stones in order to Boil Water and Cook Foodstuffs
Stone-Heating/Boiling Complex
Unlined Hearths

• Single Use or Brief Use Hearth
• Surficially Prepared, Minimal Subsurface Disturbance
• Archaeologically Represented through Burned Earth and Charcoal Lenses
Hearths By Depth

0-9cm: 3
10-19cm: 25
20-29cm: 33
30-39cm: 9
40-49cm: 6
50+cm: 1

Depth
Diameter and Depth

\[ y = 0.7971x + 53.478 \]

\[ R^2 = 0.195 \]
Plant and Animal Remains

• Of the Excavated 77 Definitive FCR Features:
  – 21 Contain Bone Fragments
  – 22 Contain Plant Residue
  – 13 Contain Both Plant and Animal Remains
  – 47 Contain Only Charcoal and FCR (It should be noted that full evaluation of these remaining 47 hearths was not completed, and it is the expectation that the majority would similarly yield plant and/or animal remains)
Fatty Acid Residues and Ethnobotanical Evidence

Plants Identified:
• Pine Nuts & Pine Cones
• Bulbs, possibly Sego Lily and Onion
• Seeds, including Knotweed and Cheno-am

Animals Identified:
• Large Herbivores
• Small Mammals
Implications of Plant Residues and Faunal Remains

• Identified Plant and Animal Remains Suggest a Favorable Set of Living Conditions during the Late Archaic (Water Sources, Plant/Animal Procurement Areas)

• Potentially Identifies Area as a Locally Important Plant-Processing Center

• Evidence for Meat-Steaming Activities
Ethnobotanical Implications

• Presence of Sego Lily and/or Onion bulb fragments supports the use of FCR Features as Earth Ovens
• Presence of Cheno-am and Knotweed suggest their possible use as a lining or layering material in Earth Ovens
• Presence of Grindstones in vicinity of FCR features suggests that Pine Nuts and possibly Cheno-am and Knotweed seeds were being ground into meal
• Seasonal Evidence Suggests Spring and Summer Occupation Periods
Geomorphology

The Argument for a Favorable Archaic Landscape:
- Streams Existed in Area for Thousands of Years
- Evidence for Significant Sediment Storage During the Late Archaic and Early Late Prehistoric Suggests Flowing Streams
- Late Archaic and Early Late Prehistoric Cultural Deposits would occur Surficially or in Shallow Buried Contexts
- High Potential for Paleo/Early Archaic Deposits in Arroyo Fill
A Changing Landscape

An Arroyo System Forming An Eroded “Badland”
Hearth-Specific Landscape
Results:

- Excavation of a Representative Sample of 77 Hearths of Divergent Uses and Styles
- Acquired 15 Radiocarbon Dates, Placing Seasonal Occupations to the Late Archaic and Prehistoric Periods
- Preliminary Geomorphological Study To Aid in Explaining the Archaeological Landscape
- Ethnobotanical and Fatty-Acid Residue Studies to Understand Material (Culinary) Culture of the Late Archaic
- Improved Understanding of FCR Feature/Hearth Usage Patterns
Thank You!