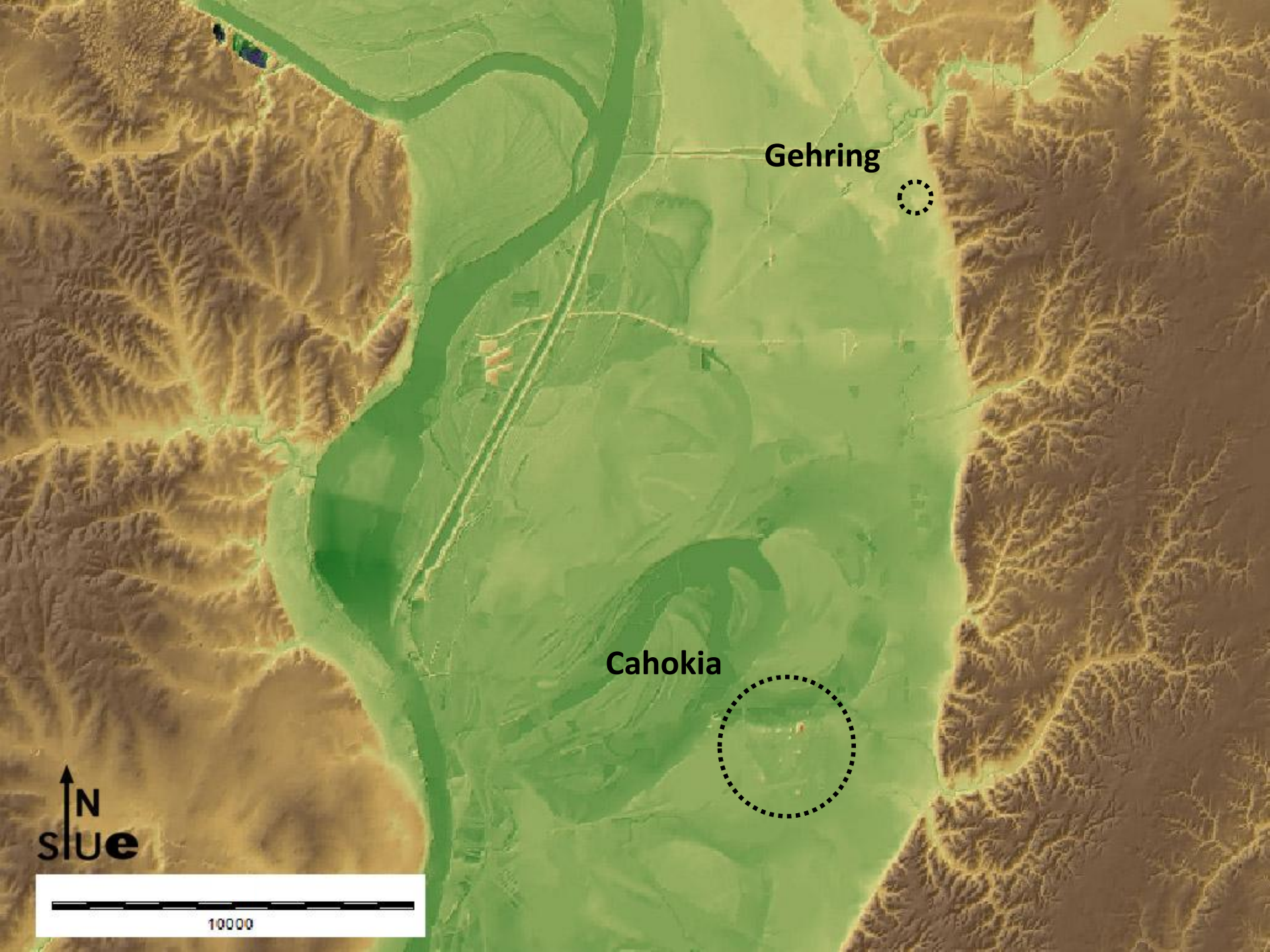


The background of the slide is a photograph of a cornfield. In the foreground, rows of green corn plants are visible. In the middle ground, there are several white tents with red lettering on their peaks. The background is filled with a dense line of green trees under a cloudy sky.

Pre-Contact Plant Use at the Gehring Site (11MS99)

**Synergy Between Culture and
Environment**

Johanna Guthrie



Gehring

Cahokia

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Cultural History

- Two Major Cultural Climaxes
 - Hopewellian Interaction Sphere (B.C. 100 – A.D. 350)
 - Emergent Mississippian (A.D. 900 – 1050) and Mississippian Periods (A.D. 1050 – 1400)



Cultivation

- Starchy Seed Complex
 - Maygrass (*Phalaris caroliniana*)
 - Erect Knotweed (*Polygonum erectum*)
 - Goosefoot (*Chenopodium berlandieri*)
 - Little Barley (*Hordeum pusillum*)
- Maize (*Zea mays*)
 - Emergent Mississippian



Hypotheses

- Hopewellian Interaction Sphere
 - Nuts: dominated by Hickory and Hazel
 - Seeds: Starchy Seed Complex Dominated by Maygrass
- Emergent Mississippian/Mississippian
 - Nuts: dominated by Hickory
 - Seeds: Increase in Chenopod
 - Maize
- General Increase in Seed Abundance Through Time

Methods

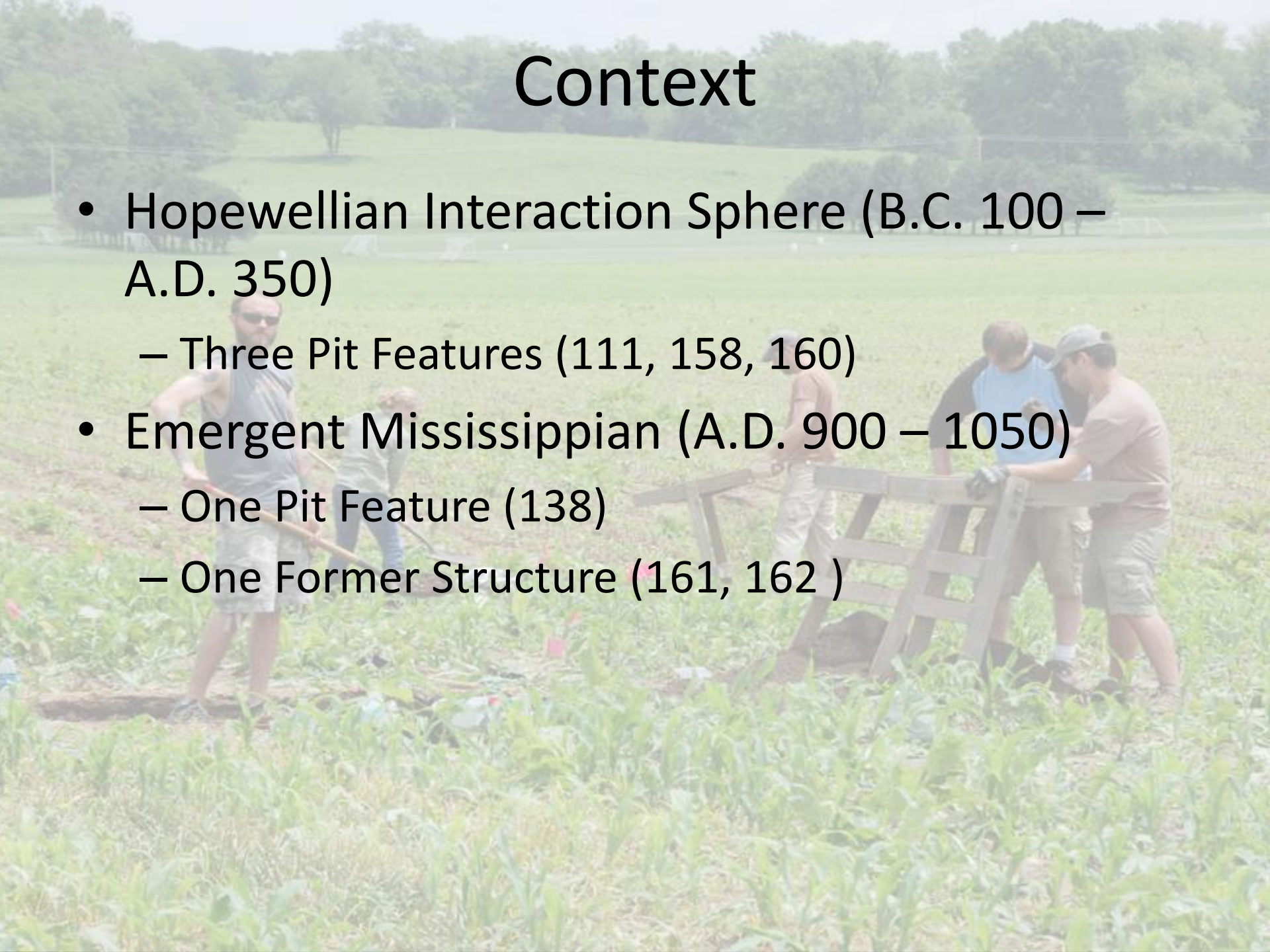
- Sampling: 10L Soil Samples Taken from Bisected Pit Features
- Flotation using Flote - Tech Flotation Machine into Light and Heavy Fractions



- Zinc Chloride Flot
- Separation of Light Fraction into 0.5-2mm and >2mm Fractions

Context

- Hopewellian Interaction Sphere (B.C. 100 – A.D. 350)
 - Three Pit Features (111, 158, 160)
- Emergent Mississippian (A.D. 900 – 1050)
 - One Pit Feature (138)
 - One Former Structure (161, 162)





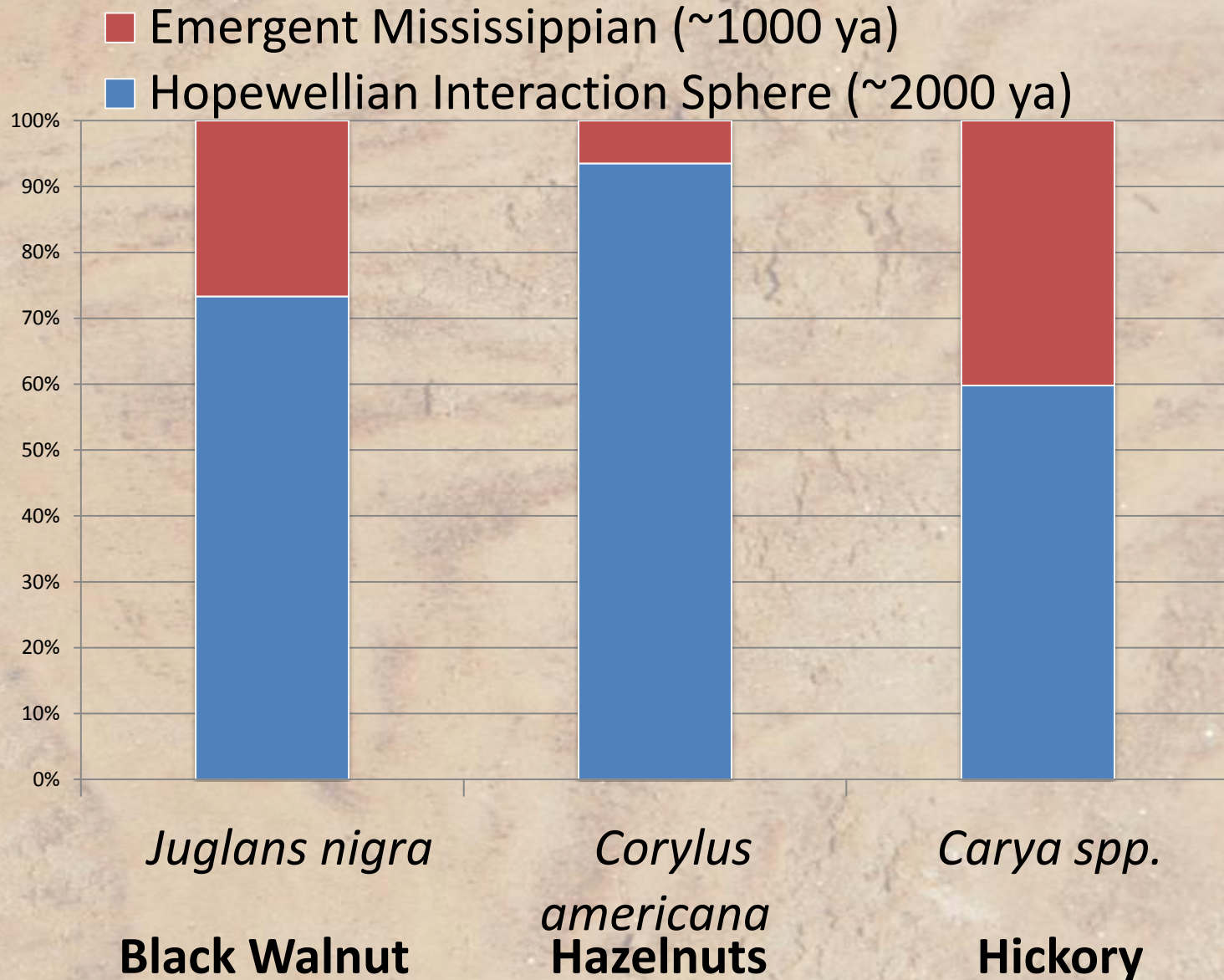
Feature 158
Hopewellian Interaction Sphere
(B.C. 100 – A.D. 350)

11 M899
GEHRING SITE
FEATURE M1
EXCAVATED
AND
SOUTH WALL PROFILE
7 JULY 2010

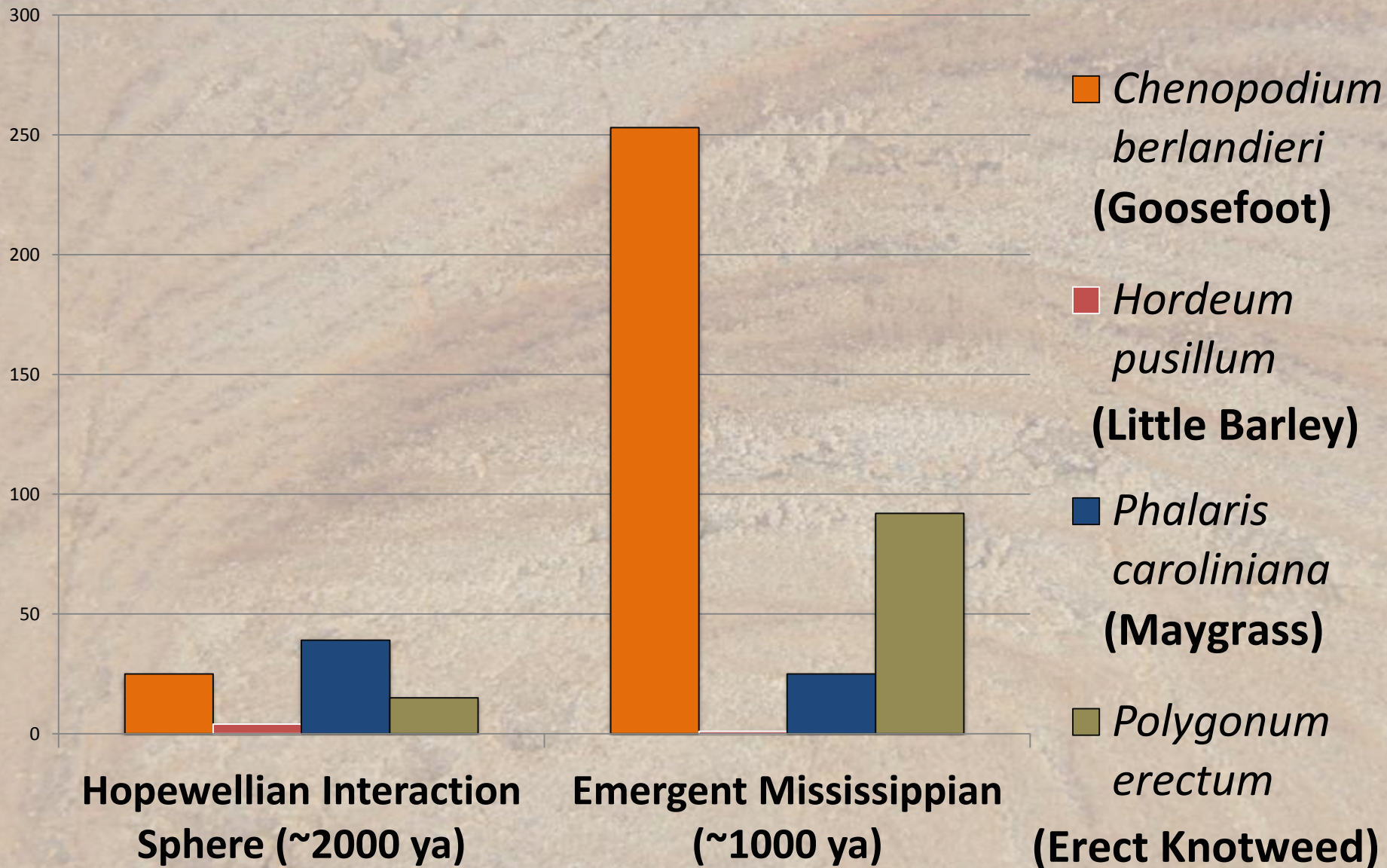


Feature 161
Emergent Mississippian Period
Edelhardt Phase
(~ A.D. 1025 – 1050)

Nutshell

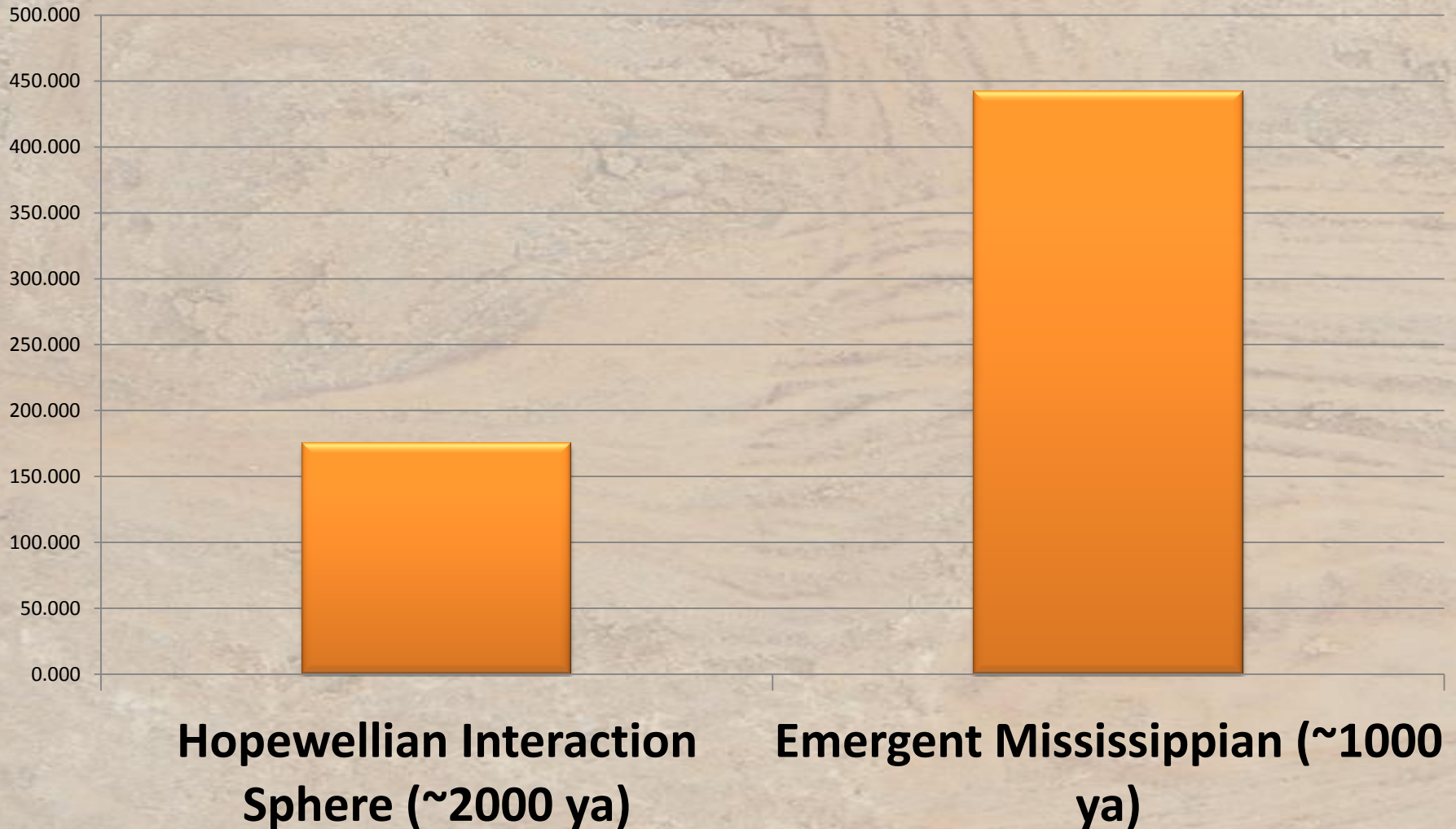


Starchy Seed Complex



Seed Prevalence Through Time

Seed Count per g. of Charcoal > 5 mm

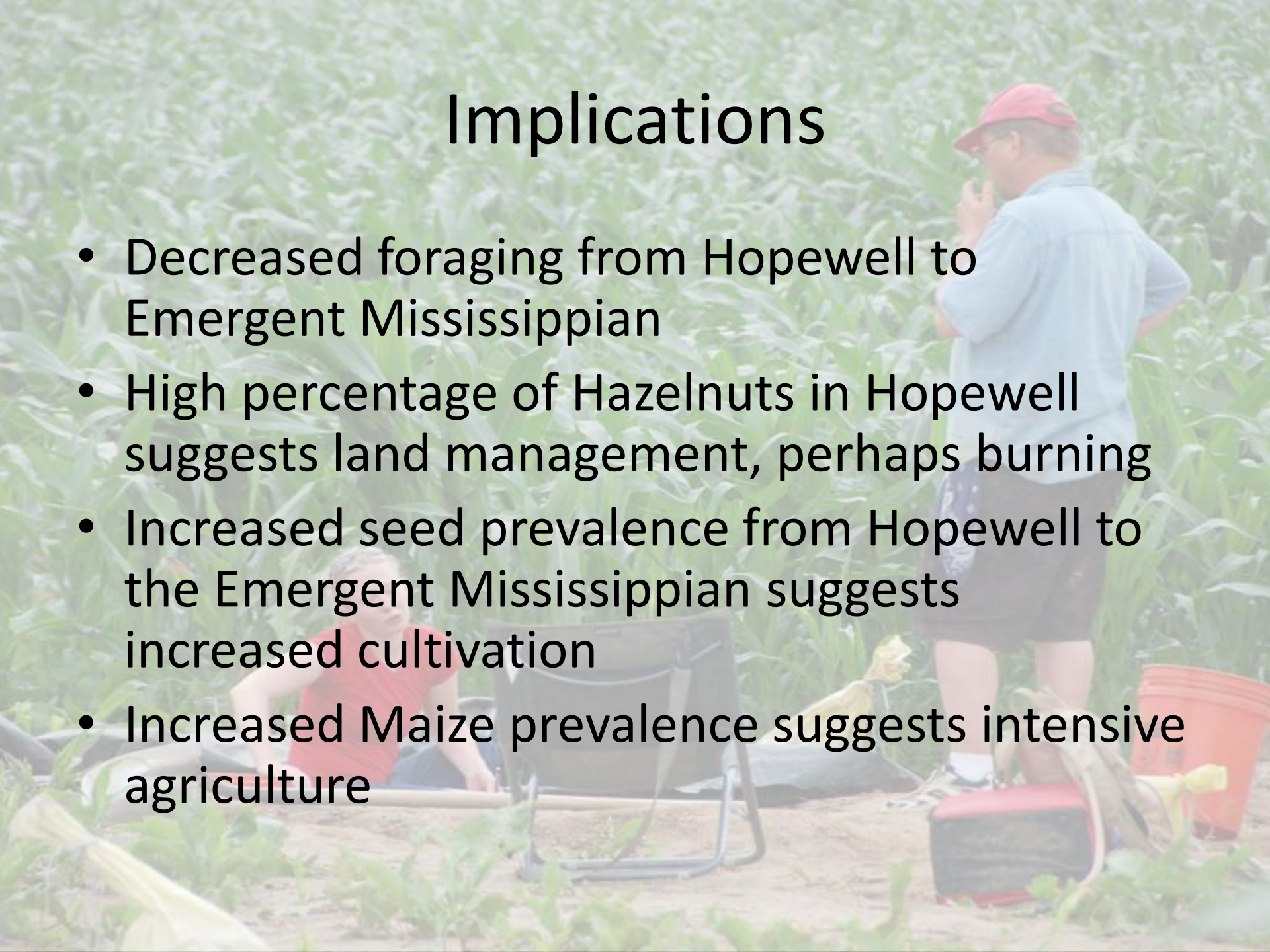


Maize

- Maize was found in two Hopewell Features and all Emergent Mississippian Features
- Significance
 - Earliest Specimen: Holding Site (11MS118) between B.C. 170 – A.D. 10 (Riley 1994)
 - Mosaic Adoption Pattern

Implications

- Decreased foraging from Hopewell to Emergent Mississippian
- High percentage of Hazelnuts in Hopewell suggests land management, perhaps burning
- Increased seed prevalence from Hopewell to the Emergent Mississippian suggests increased cultivation
- Increased Maize prevalence suggests intensive agriculture



Future Work

- Wood Analysis
- AMS Radiocarbon dating of Maize
- Artifact Analysis from 2010 Excavation
- Further Excavation



Acknowledgments

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- Dr. John Kelly
- Michele Lorenzini
- The URCA Program
- The Anthropology Department



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Questions?

