Reconstructing Ancient Lives Using 3D Technology:
A Case Study of Pork and Doughboy Point, Belize
By Jane Fiegel
Under direction of Dr. Heather McKillop
Overview

• 3D technology as cultural preservation
• Enhance collections and exhibits
• Pork and Doughboy Point, Belize

DIGITAL IMAGING AND VISUALIZATION IN ARCHAEOLOGY LAB
LSU
Aerial Photo of Pork and Doughboy Point, Belize
Taken by Rachel Graham
Benefits of 3D Technology

• Conservation
• Collaboration and Research
• Economic Advantages

Limitations of 3D Technology

• Digitization or physical preservation?
  • Technological drawbacks
  • Sensitive materials
Materials

• 199+ artifacts
• 25 scanned artifacts
• 10 terrestrial
• 12 underwater
• 3 unknown
Scan Settings/Scanning

• Scan Mode/Positioning: 360°/Bracket/Single
• Divisions
• Resolution: Quick/SD/HD
• Points per inches²
• Target Color: Dark/Neutral/Light
• Range: Macro/Wide/Extended
• Trim
• Align
• Fuse
Pottery Classification Systems

• Type-Variety
• Formal analysis
Site Discussion

- 2 Candeleros
- 2 Incense burners
- 4 vertical wall basins with rims
- 5 jar rims
- 1 perforated spindle whorl
- 1 unperforated spindle whorl
- 1 bowl
- 1 possible jar handle

- 1 clay cylinder vessel support
- 1 stem blade
- 1 chert tool
- 1 celt tool
- 1 possible fishing weight
- 1 metate
- 2 manos
Compositional characterization using thin section petrography

**Microscopic technique deriving from Geology**

Means of differentiating and characterizing pottery based on its raw material ingredients (a pot = clay + temper)

Means of tying pottery to the geological landscape and tracing its movement

Based on an understanding of raw material resources available - local area and/or regionally
Technologically comparable to Punta Ycacos pottery from Payne`s Creek Salt Works – a sandy-textured clay, tempered with sand
But, made from locally available raw materials
Paste recipe is a silty-textured or muddy natural clay, mixed with a beach sand
Geologically distinguished from Payne`s Creek by prevalence of chert, argillaceous rock fragments; it contains a deltaic clay

Petrographic analysis by Dr. Linda Howie

Tiny, angular frags of mica, quartz and feldspar
rounded quartz sand
plane polarized light (x40)
chert
cross polarized light (x40)
**Non-local:** brought to the site from elsewhere

**Paste recipe:** a sandy-textured, micaceous clay containing abundant volcanoclastic, metamorphic and igneous rock fragments, tempered with dolomite. This rock & mineral assemblage in the clay indicates a **connection to areas to the north**, associated with Bladen Volcanic Member. Warri Red jars at Payne`s Creek come from this same area.
Bladen Formation
(lavas, pyroclastic Rx)

Paynes Creek
Saltworks

Pork & Doughboy?

Manufacturing Origins of the samples
one of these is
The actual artifact!
The others are 3D printed
replicas: Make a Guess!
Conclusion

• Conservation and display
• Collection management
• 3D tech is not a replacement, but an enhancement
References

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