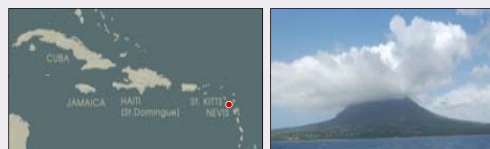


# Sugar, Slaves, and Shovel Test Pits: Preliminary Results from Nevis

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## 1. Introduction

This poster explores change in plantation and slave-village organization during the 18th and early-19th centuries on two sugar estates located on the island of Nevis in the eastern Caribbean. We use survey data to evaluate competing models of economic and social change in the British Atlantic and its slavery-based economy.



Settled in the 17th-century, small volcanic islands in the eastern Caribbean such as Nevis and St. Kitts were quickly divided into wedge-shaped estates that left little room for expansion. Larger islands in the western Caribbean, such as Jamaica and St. Domingo, allowed the creation of new sugar estates, and the expansion of existing estates, throughout the 18th century (Higman 1995:43).

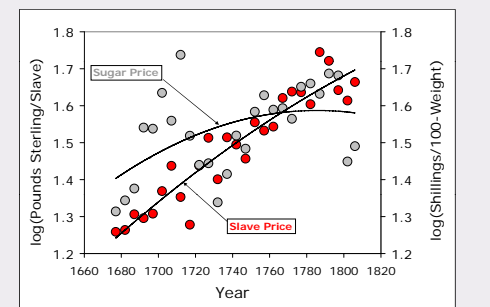
## 2. The Models

### Decline . . .

The traditional economic model suggests a permanent decline took place in the slave economy of the British Atlantic during the second half of the 18th century. This led British elites to abolish the slave trade in 1807 and slavery in 1834 (Carrington 2002, Raggatz 1924, Ryden 2001, Williams 1944).

### Or Rise?

A more recent model points to the steadily increasing profitability of 18th-century sugar plantations in the Caribbean, caused by gains in slave productivity (Eltis et al. 2005, Ward 1988). Recently collected economic data favor the second model. This would imply that abolition was achieved at real economic cost to British elites.



Decelerating rates of increase in sugar prices during the 18th century were accompanied by constant rates of increase in slave prices. The contrast suggests that as slave productivity and longevity increased so did slave prices (Eltis et al. 2005).

## 3. Archaeology to the Rescue!



Archaeological data can help clarify the issue. If the "Rise" model is correct, we should see evidence for:

1. Changing patterns of land use and technological investment that increased efficiency of sugar production.
2. Better living conditions for slaves, lower mortality, and greater fertility as owners sought increases in per capita labor outputs, as the supply of African slaves tightened, and the prospect of the slave trade's abolition loomed.

Data from recent archaeological survey of two Nevis sugar estates, New River and Jessups, offer evidence for both.

## 4. The Sites

Located on opposite sides of Nevis, the New River and Jessups estates followed similar trajectories. Both estates were established in the 1720s and they had grown to around 250 acres by the mid-1700s. At that time, 111 enslaved Africans labored at Jessups while 129 people were enslaved at New River. Slave inventories from both estates indicate that many were imported directly from Africa while others are listed as "Creole".



Jessups Estate c. 1755 © Southampton City Archives  
 The location of the Jessups 18th-century slave village (Jessups I) adjacent to the great house and mill complex is documented on a 1755 plot. Pencil additions suggest the location of a later settlement, further away from the great house, on the opposite side of a deep valley or gully. Its existence was confirmed by our survey (Jessups II).



New River Estate, c. early-19th century © Suffolk Record Office  
 The site of New River's 18th-century slave village (New River I) is known from documents. Parcel #11 is labeled as "Negro Houses" while the surrounding parcels are listed as "Cane Lands".

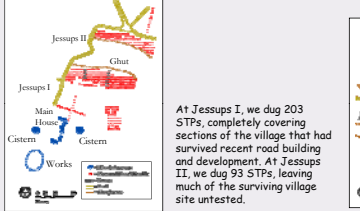
## 5. Survey Methods



Shovel test pits (STPs) were placed on 6-meter centers across the survey areas. Each STP was 50 cm. in diameter. All dirt was screened through 1/4 inch mesh. Sediments and stratigraphy were recorded for each STP.



GPS and total stations were used to digitally record the landscape of each village and plantation. Terraces, cisterns, and building ruins were among the recorded features.



At Jessups I, we dug 203 STPs, completely covering sections of the village that had survived recent road building and development. At Jessups II, we dug 93 STPs, leaving much of the surviving village site untested.



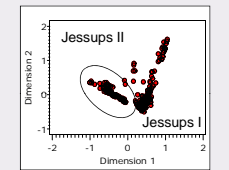
At New River I, we dug 381 STPs, completely covering the village site. At New River II, 20 STPs were dug, leaving much of the surviving village site untested.

## 6. Chronological Inference

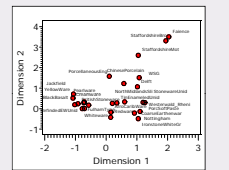
Without chronological control, our STP data are analytically intractable. We used frequency-seriation methods to infer a chronology for the STPs assemblages from each site:

- We used empirical-Bayes techniques to smooth counts of ceramic ware types in each STP, based on prior probability distributions whose parameters were estimated from counts in STPs within 12 meters.
- The gamma-Poisson model was used to smooth ware type counts initially. A beta-binomial model provided final estimates of type proportions.
- We used correspondence analysis and mean ceramic dating to identify the temporal gradient that underlies type-frequency variation.

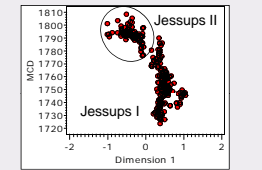
When type frequencies fit the seriation model, assemblage scores on CA dimensions 1 and 2 form a U or V shape, and dimension 1 scores correlate with MCDs (Smith and Neiman 2007).



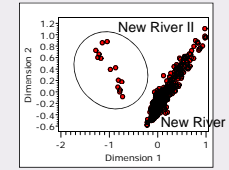
1. At both villages, ceramic ware-type frequencies fit the expectations of the seriation model well, as evidenced by the V-shaped point configuration in the plot of STP assemblages on the first two CA dimensions.



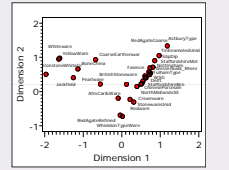
2. The corresponding plots of ware types reveal that CA axis 1 captures time: later types lie on the left, and earlier types are on the right.



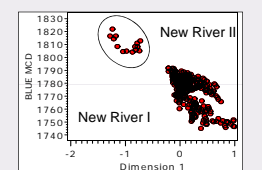
3. The MCDs and CA dimension-1 scores are correlated. This suggests that the Jessups I and New River I villages were occupied from the middle of the 18th century until about 1780. The occupation spans for Jessups II and New River II apparently run from about 1780 to 1820, based on the current limited STP sample.



4. The corresponding plots of ware types reveal that CA axis 1 captures time: later types lie on the left, and earlier types are on the right.



5. The corresponding plots of ware types reveal that CA axis 1 captures time: later types lie on the left, and earlier types are on the right.

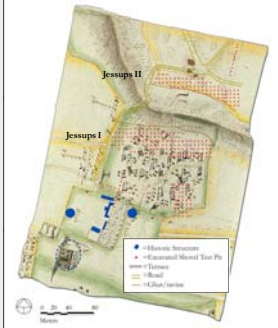


6. The corresponding plots of ware types reveal that CA axis 1 captures time: later types lie on the left, and earlier types are on the right.

## 7. Decline or Rise?

### 7.1 Evidence from Landscape Reorganization

By knitting together the historic plats, digital survey maps, and the CA results, we see patterns on both estates that point to significant landscape change that would have increased efficiency and productivity.

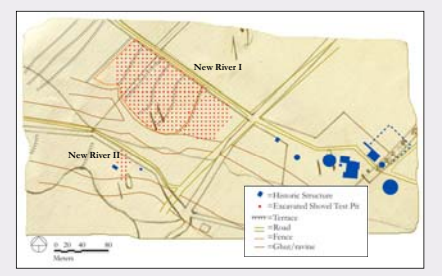


#### Jessups

The 1755 plot of the Jessups' estate shows the mid-18th century village -- Jessups I -- adjacent to the great house complex and the sugar works, which included a mill and boiling house.

An undated, penciled addendum shows the second village, Jessups II, north of a deep gully. On the plot, usable sugar fields are represented in yellow, so at the time the pencil addenda were made, the Jessups II site was under sugar cultivation.

The seriation results show that Jessups II was occupied when Jessup I was abandoned -- there is no overlap in the occupations. Stone terraces at Jessups I that post date the slave occupation indicate the abandoned village site was put into sugar production. In other words, the Jessups slave village was moved in order to increase the amount of land under cultivation and bring it closer to the plantation's processing hub. This would have increased the production efficiency by reducing travel time and labor needed to transport sugar cane to the mill.



#### New River

The Jessups sequence is duplicated at New River. The timing of the change in village and sugar field locations is identical.

The New River plot shows the 18th century village site -- New River I -- adjacent to the works. The seriation results suggest that when New River I was abandoned, New River II was occupied -- again there is no overlap in the occupations. Stone terraces at New River I post date the slave occupation and indicate the abandoned village site was put into sugar cultivation.

As at Jessups, the early slave village was moved in order to increase the amount of land under sugar cultivation and bring it closer to the plantation's processing hub. This would have increased the production efficiency by reducing travel time and labor needed to transport sugar cane to the mill.

### 7.2 Evidence from Afro-Caribbean Wares

We suspect that changes in the frequency of Afro-Caribbean ware may offer evidence for better living conditions for slaves. Here our conclusions are more tentative because research, including INAA and petrographic studies, is ongoing.



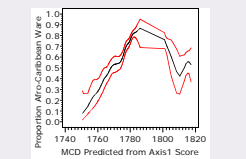
Red-slipped AC ware from New River I village: bowl rim (left), hollow vessel handle (right).

Afro-Caribbean ware is an open-fired, locally-produced, hand-built ceramic common on slave sites in the Caribbean. Red-slipped exteriors attest to the effort that went into production.

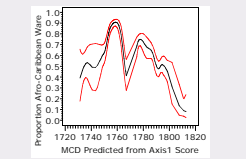
The STP chronologies for New River and Jessups allow us to chart change in the frequency of Afro-Caribbean ware relative to all other ceramics at these sites. Again, statistical methods are critical to defining the pattern of change. We fit a generalized additive model, with logistic link and binomial errors to the New River and Jessups data.

We suspect that the initial increase in AC ware before 1780 represents increases in the ability of slaves to improve their own lives though local production of ceramics, resulting in the increasingly widespread use of ceramic vessels for food processing, storage and consumption.

The post-1800 decline in the proportion of AC ware may represent greater means and motive to acquire and display more costly imported ceramics, as living conditions further improved and as payoffs to costly signaling with them increased (e.g. Galle, in press).



New River: At New River, there is a dramatic increase in AC wares from 1750 to 1780, followed by a decrease, which accelerates around 1800.



Jessups: At Jessups, the proportion of AC ware increases significantly until 1760 and decreases after 1780 and especially 1800. There is a puzzling intermediate trough around 1770.

## 8. Conclusions

STP survey offers significant new insights into change in slave lifeways on Nevis during the 18th and early-19th centuries and their implication for competing models of the long-term direction of the slave economy of the British Atlantic.

Our preliminary evidence supports the more recent "Rise" model. In addition to landscape reorganization and the evocative data for ceramic use among slaves, we see owner investment in sugar processing technology in the sugar work ruins at New River. Remains of an early windmill and later and steam mill demonstrate that New River owners upgraded their sugar works in order to maximize production.

Together, these data support the "Rise" model, with is significant implication that abolition, initially of the slave trade and later of slavery itself, was not economically driven and that it exacted a significant cost to British elites.

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