APPENDIX E

BOTANICAL RECOVERIES ANALYSIS, SITE 7NC-G-143

FLORAL ANALYSIS: DRAWYER CREEK SOUTH SITE (7NC-G-143), NEW CASTLE COUNTY, DELAWARE

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INTRODUCTION

The Drawyer Creek South site (7NC-G-143), New Castle County, Delaware is a multi-component prehistoric site, that was occupied periodically from the Archaic through the Woodland II period. Twenty-five flotation samples from the site were submitted to *Lake States Archaeological & Ecological Consulting* for archaeobotanical analysis. The analysis was directed toward identifying subsistence activities, site seasonality, and feature function. Unfortunately, due to the mixed nature of the deposits, no conclusions regarding subsistence trends through time can be posited from the assemblage.

ANALYTICAL METHODS

The Drawyer Creek South archaeobotanical assemblage was derived from 25 flotation samples (26.5 liters) that were collected from three features and four excavation units. For purposes of quantitative comparison, only the flot collected samples are considered in this analysis. Variations in the distribution and density of these remains reflect differences in feature function and subsistence activities. These data also may provide information regarding the prehistoric environment.

Flotation samples were processed at the Louis Berger & Associates, Inc. laboratory facility, using a Dausman closed-tank system. Light fraction materials were recovered in a # 40 (0.04 mm) mesh and heavy fraction in a # 20 (0.8 mm) mesh.

Materials recovered from the flot samples were sorted under low power binocular magnification (10x). All wood and bark charcoal, carbonized nut, and other floral remains > 2 mm in size were recovered from these samples. The < 2 mm residue was then scanned and all categories of floral remains that were not represented in the > 2 mm component of any given sample were separated out. For consistency and inter-site comparison, only the > 2 mm wood, bark and nut remains were used for counts and weights.

Randomly selected charcoal fragments from each sample were identified to the most specific taxon possible. Unfortunately, due to their diminutive size, many of the wood charcoal fragments could not be identified to genus. Seed and nut remains were identified to genus and species whenever possible, although some specimens could only be identified to family. Identifications were made with the aid of modern comparative collections and with identification keys (Martin and Barkley 1973; Montgomery 1977; Core *et al.* 1979).

Only carbonized seeds are considered prehistoric in this study because uncarbonized materials are rarely preserved at open-air sites in temperate environments. Preservation of unburned material can occasionally occur under unusual conditions such as anaerobic contexts, or in association with copper sulfates and high pH (Lopinot and Brussell 1982); these conditions are not present at the Drawyer Creek South site. Further, the epidermis was present on many of the seeds and the embryos were fresh, indicating that they were modern contaminants. Modern seeds can be introduced into archaeobotanical assemblages by several sources, including bioturbation (Stein 1983) and during collection and processing of samples (Minnis 1981).

RESULTS AND INTERPRETATION

Flotation samples (26.5 liters) from Features 2, 3, and 5 and four excavation units (23, 35, 79, and 82) at the Drawyer Creek South site are included in the floral analysis (Table 1). The flotation samples contained wood and bark charcoal, charred nutshell, seeds, a bud, a peduncle, and unidentifiable organic material.

Densities of wood charcoal are variable among the sampled contexts (Table 2). The high densities of charcoal in Features 2 and 5 suggest that they were used as hearths. Moderate densities of wood charcoal from Excavation Units 35 (Level 2) and 82 (Level 2) are characteristic of kick zones around hearths. Low densities of wood charcoal in the other samples reflect the presence of general occupational refuse across the site.

Identified wood charcoal from the samples, in order of predominance, includes oak/*Quercus* sp. (including the white oak subgenus/*Lepidobalanus* [e.g., white oak/*Q. alba*, chestnut oak/*Q. Prinus*] and the red oak subgenus/*Erythrobalanus* [e.g., water oak/*Q. nigra*, willow oak/Q. Phellos]), hickory/*Carya* sp., ash/*Fraxinus* sp., ring-porous (e.g., hickory, ash and oak) and diffuse-porous (e.g., maple/*Acer* sp., birch/*Betula* sp.) wood, and unidentifiable wood (see Table 1). The overall composition of the assemblage suggests that an transitional lowland/upland forest, including oaks (e.g., water, willow, chestnut, and white oaks), with tulip tree/*Liriodendron Tulipifera*, river birch, beech and other trees; a community type distinct to the this region (Braun 1950:268-269). The predominance of oaks suggests that there may have been some cultural selection for woods of better fuel value (cf. Hunt and Rammrath 1978).

Relatively low densities of bark charcoal are present throughout the assemblage (see Table 2). Higher densities do, however, occur in Features 3 and 5, which also contain higher densities of wood charcoal. The densities of bark charcoal suggest that it is an incidental inclusion, representing bark that was adhering to the wood that was burned.

Nutshell, including hickory/*Carya* sp. (e.g., shellbark hickory/*C. ovata* and bitternut/*C. cordiformis*), walnut family/Juglandaceae and cf. hazelnut/*Corylus americana*, was recovered from 28% of the samples (see Table 1). It occurs in low to moderate densities (1-2 ct/1 liter) among the majority of the samples (see Table 2). The distribution and density of nuts

suggests that they may represent food refuse. In contrast to the other samples, Feature 5 contains a high density of nutshell. The high density of nuts in this feature, in association fruit seeds, strongly suggests that nuts were processed in this context. These nuts would be available in upland forest communities adjacent to the site (Braun 1950).

Seeds, including mustard family/Brassicaceae, mulberry/*Morus rubra*, grape/*Vitis* sp., and unidentifiable seeds, were recovered from 20% of the samples (see Table 1). Fruit seeds were concentrated in Features 2 and 5 and in Excavation Unit 82, which appears to be adjacent to a fire related feature that may have been used to prepare plant foods. The other seeds occur in Features 3 and 5. Given their context, they are probably culturally derived. The grape and mustard family seeds would probably be available in the open area surrounding the site. The mulberry was probably collected from an upland forest adjacent to the site.

The flotation samples from the Drawyer Creek South site also contained a bud and a peduncle (a stalk bearing a flower or fruit), as well as unidentifiable organic materials. The source and function of these remains is unclear.

CONCLUSIONS

The floral assemblage from the Drawyer Creek South site indicates that during the course of its prehistoric occupation, nuts and fruits were targeted resources. These plant foods would have been harvested in the late summer and fall. Based on the small sample considered in this analysis, it would appear that the site was used as a seasonal camp.

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Table 1. Identified Flora: Drawyer Creek South Site (7NC-G-143).

Provenience				Flot	Wood Charcoal										Bark Charcoal		Nutshell						Seeds				Miscellaneous Flora		
							Identified Taxa										Carya/ Hickory		cf. Corylus americana/ Hazelnut		Walnut (Hickory) Family/ Juglandaceae								
Feature	Excavation Unit	Level	Quadrant/Half	Flot vol	Ct	Wt	Carya/Hickory	Fraxinus americana/White ash	Quercus/Oak	Quercus/Oak-red group	Quercus/Oak-white group	Deciduous-ring porous	Deciduous-diffuse porous	Unidentifiable	Ct	Wt	Ct	Wt	Ct	Wt	Ct	Wt	Brassicaceae/ Mustard Family (Ct)	Morus rubra/Mulberry (Ct)	Vitis/Grape (Ct)	Unidentifiable (Ct)	Bud (Ct)	Peduncle (Ct)	Unidentifiable Organic (Ct)
2	30	1		1.0	17	0.01	1		1	1		3		4															1
2	30	5	W	1.0	2744	30.29	4				10	3		3	25	0.80					2	0.02		3					1
3	34/46	1		1.0	20	0.13			2			3		5	2	0.01							1			1			
3	34/46	2		1.5	10	0.10				1		3		1	2	0.02													
3	34/46	3		1.0	27	0.67			1	1		3		5	3	0.02													
5		2	E	1.0	129	1.42	1		3		4	7		5	36	0.27	25	0.20			11	0.06		6		1		1	1
	23	2		1.0	6	0.04						3		2	2	0.01													1
	23	3		1.0	3	0.06						1		2	4	0.04													1
	23	4		1.0	3	0.02			1			1		1															
	23	5		1.0																	1	0.01							
	23	6		1.5	1	0.01																					1		
	35	2		1.0	37	0.19					1	9			13	0.10													3
	35	3		1.0	17	0.13						1		9	1	0.01			1	0.01									
	35	4		2.0	4	0.03								4															
	79	1		1.0	4	0.02						1		3															1
	79	2		0.5	10	0.09	1					2	1	1	1	0.01													
	79	3		1.0	5	0.03					1	1		3															
	79	4		1.5	2	0.02								2	2	0.02													
	79	5		1.5	4	0.03						2		2	1	0.01													
	82	1		1.0	9	0.06			1			4			1	0.01								19					
	82	2		1.0	41	0.37	1					13		6										5	1				
	82	3		1.0	21	0.11						7		3							2	0.02							
	82	4		1.0	11	0.13		1	1			3		5							2	0.01							
	82	5			2	0.02		1						1	3	0.02					1	0.01							1
	82	6		1.0																	1	0.01		1					
	Totals			26.5	3127	33.98	8	2	10	3	16	70	1	67	96	1	25	0.20	1	0.01	20	0.14	1	34	1	2	1	1	10

Table 2. Standardized Floral Values: Drawyer Creek South Site (7NC-G-143).

Provenience			Flot	Wood Charcoal		Bark Charcoal		Nutshell		Fruit Seeds	Other Seeds
Feature	Provenience Unit	Level	Flot vol	Std Ct	Std Wt	Std Ct	Std Wt	Std Ct	Std Wt	Std Ct	Std Ct
2	30	1	1.0	17.0	0.01	0.0	0.00	0.00	0.00	0	0
2	30	5	1.0	2744.0	30.29	25.0	0.80	2.00	0.02	3	0
3	34/46	1	1.0	20.0	0.13	2.0	0.01	0.00	0.00	0	2
3	34/46	2	1.5	6.7	0.07	1.3	0.01	0.00	0.00	0	0
3	34/46	3	1.0	27.0	0.67	3.0	0.02	0.00	0.00	0	0
5		2	1.0	129.0	1.42	36.0	0.27	36.00	0.26	6	1
	23	2	1.0	6.0	0.04	2.0	0.01	0.00	0.00	0	0
	23	3	1.0	3.0	0.06	4.0	0.04	0.00	0.00	0	0
	23	4	1.0	3.0	0.02	0.0	0.00	0.00	0.00	0	0
	23	5	1.0	0.0	0.00	0.0	0.00	0.00	0.00	0	0
	23	6	1.5	0.7	0.01	0.0	0.00	0.67	0.01	0	0
	35	2	1.0	37.0	0.19	13.0	0.10	0.00	0.00	0	0
	35	3	1.0	17.0	0.13	1.0	0.01	1.00	0.01	0	0
	35	4	2.0	2.0	0.02	0.0	0.00	0.00	0.00	0	0
	79	1	1.0	4.0	0.02	0.0	0.00	0.00	0.00	0	0
	79	2	0.5	20.0	0.18	2.0	0.02	0.00	0.00	0	0
	79	3	1.0	5.0	0.03	0.0	0.00	0.00	0.00	0	0
	79	4	1.5	1.3	0.01	1.3	0.01	0.00	0.00	0	0
	79	5	1.5	2.7	0.02	0.7	0.01	0.00	0.00	0	0
	82	1	1.0	9.0	0.06	1.0	0.01	0.00	0.00	19	0
	82	2	1.0	41.0	0.37	0.0	0.00	0.00	0.00	6	0
	82	3	1.0	21.0	0.11	0.0	0.00	2.00	0.02	0	0
	82	4	1.0	11.0	0.13	0.0	0.00	2.00	0.01	0	0
	82	5	1.0	2.0	0.02	3.0	0.02	1.00	0.01	0	0
	82	6	1.0	0.0	0.00	0.0	0.00	1.00	0.01	1	0