

Preliminary Pollen Analysis
Hopewell Furnace National Historic Site

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courses. The high amounts of sedge, cinnamon fern and alder and of meadow rue (*Thalictrum*) (see Appendix) are consistent with a persistent alder swamp in the immediate vicinity. This site, then, provides good potential for reconstruction of the local vegetation in the past.

Interpretation of the other two cores is more problematical. The close similarity between the two samples in 862a suggests that either there has been mixing of the sediment or that there is a very high deposition rate. In either situation, the core does not provide much information about past vegetation.

Core 862a presents some changes between top and bottom, but they are anomalous. While at first glance the decrease in grass and ragweed pollen percentages seem similar to those in 861, there is an increase in actual numbers of grains of each per cc of sediment. The large increase in fern spores suggests very local changes in vegetation and perhaps corresponds with rapid local sediment accumulation. The large amount of chestnut pollen in the bottom sample is striking, but not easily interpreted. It could merely correspond with a locally growing chestnut tree in a nearby dry spot. It is also odd that the large numbers of elm (*Ulmus*) trees growing locally are not represented except by one grain in each core. It seems, therefore, that interpretation of pollen data at these sites is unreliable as an indicator of past vegetation.

Conclusion

The site at 861 has potential for more detailed pollen analysis of more cores to yield information about changes in the local vegetation over time. It is in a narrow enough marsh to include pollen from nearby uplands, so could also reveal changes in some local upland vegetation. It is of interest as a preliminary finding that beech and hickory were present in greater quantities in the past. In addition, charcoal is found throughout the sediment, and could be tallied to suggest changes in fire frequencies, perhaps associated with the local charcoal industry. Iron content of the sediment could be correlated with deposition from the furnace and provide more dating controls.

Appendix 1. Pollen Counts

1 = 861, 0-2 cm, 2 = 861, 35-36 cm, 3 = 862, 0-1 cm, 4 = 862, 44-47 cm, 5 = 862a, 0-2 cm, 6 = 862a, 39-40 cm.

	1	2	3	4	5	6
Quercus	20	55	3	1	12	5
Castanea	0	4	0	11	5	13
Carya	2	7	4	0	4	2
Juglans nig.	2	0	2	0	1	0
Betula	5	5	3	2	2	0
Acer sac.	1	1	1	0	0	0
Acer rubrum	3	2	1	0	4	0
Fagus	0	5	1	1	1	0
Fraxinus	0	1	1	0	0	0
Ulmus	1	1	1	0	1	0
Platanus	2	0	0	1	0	0
Alnus	52	55	1	5	2	1
Populus	3	0	4	1	1	3
Salix	2	0	0	0	0	0
Ost/Carp.	2	0	0	1	1	0
Morus alba	1	0	0	0	0	0
Caprifoliac.	0	0	2	0	0	0
Prunus	0	0	1	0	1	0
Pinus total	6	12	7	4	11	10
Picea	0	0	0	2	0	1
Tsuga	2	3	0	0	1	2
Cupress.	0	1	5	2	6	2
Zea	1	0	0	0	0	2
Cyperaceae	26	17	2	4	9	6
Poaceae	12	2	15	4	17	25
Ambrosia	23	1	20	11	21	32
Asteraceae	5	9	0	15	1	1
Cheno-Am	1	0	1	0	2	1
Plantago lan.	1	0	0	0	0	0
Liguliflorae	0	1	0	0	0	0
Rumex	1	0	0	0	0	0
Ericaceae	1	1	0	0	0	0
Ilex	2	0	0	1	0	1
Thalictrum	1	6	1	0	0	0
Cruciferae	1	0	0	0	0	0
Urticaceae	1	0	0	0	0	0
Vitis	0	1	0	0	1	0
Geum?	0	1	0	0	0	0
Humulus	0	1	1	0	0	0
Rhamnus	0	0	1	0	0	0
Leguminosae	0	0	0	1	0	0
Umbelliferae	0	0	0	0	1	0
Viburnum	0	0	0	0	2	0
Dianthus?	0	0	0	0	0	1
Solanaceae	0	0	0	0	0	1
Rosa	0	0	0	0	0	1
Typha	0	0	2	0	0	0

Monolete	20	6	21	60	5	2
Trilete	2	5	2	5	0	2
Osmunda	47	90	1	23	3	4
Pteridium	2	2	0	0	1	2
Other spores	1	0	0	5	0	3
Unknown	1	5	0	0	2	1
Total	253	300	104	160	127	124
Control	23	8	72	22	42	20
Corroded	46	55	38	na	45	78

Figure 2. Preliminary Pollen Study: Hopewell Furnace National Historic Site

