

Monitoring Report
Great Meadow Run Stream Course Investigation (FONE 5)
Fort Necessity National Battlefield

by
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INTRODUCTION

In late October, 1991, Chuck Smith, Chief Ranger at Fort Necessity, requested John Pousson of the Eastern Applied Archeology Center, Eastern Team, Denver Service Center, to provide assistance on a park project. The project -- FONE 5 -- consisted of the excavation of several backhoe trenches across the probable historical course of Great Meadow Run near the reconstructed fort, to identify the historical stream channel. Dr. Robert L. Cunningham, a Pennsylvania State University soil scientist and the project's principle investigator, was expected to choose the precise locations of the trenches and to record and interpret the exposed soil profiles. Mr. Smith suggested that because of the proximity of the excavations to the fort archeological monitoring would be advisable. Mr. Pousson agreed and following discussions with his supervisor and with the Regional Archeologist he made arrangements to perform the necessary monitoring.

PROJECT BACKGROUND

Great Meadow Run is a basic element of the natural and cultural landscape of the Fort Necessity vicinity, and in 1754 it contributed to the selection of this location for construction of the fort, and thereby influenced the course of the battle which the park commemorates. The stream was artificially rechanneled about 1860. Presumptions regarding the original location of the stream and claims concerning natural shifts in its course figured in earlier disputes about the historical configuration of the fort itself (Harrington 1957). While Harrington's 1952-1953 archeological work determined the true plan of the fort, the accuracy of a 1931 survey's depiction of the stream course (see attached "Historical Base Map - 1931") remained for the most part unconfirmed. The surveyor, Harry R. Blackford, stated that the "[d]epression of old channel ranges from 3 to 10 ft. wide and from 6 in. to 3 ft. in depth." Based on a 1953 excavation in one location along the original channel, parts of which were filled prior to and during the 1932 reconstruction of the fort, Harrington suggested that "the banks of the stream channel prior to its straightening were not particularly steep, and presented a profile which one could assume would have withstood normal flooding conditions....[T]here is no strong reason to believe that the old trace mapped by Blackford is too different from its 1754 course" (1957: 47).

The present interest in the historical course of the stream stems from a long standing concern of park staff that interpretation of the fort to the public suffers as a result of the nearly complete obscurity of the original stream course, together with the artificiality of the existing course. If it were possible to identify the historical course, consideration could be given to its restoration, or to landscaping more evocative of its actual characteristics (Smith and Strickfaden, personal communication, 1991).

METHODS AND FINDINGS

The fieldwork began on November 4, 1991, with Dr. Cunningham's examination of the ground surface in the vicinity of the fort, particularly northwest of the lawn surrounding the fort, where the existing meadow vegetation had been mowed for the project. More-or-less continuous and intact topographic indications of a former stream meander were noted northwest of the fort, where trenches 5, 6, and 8 were located as shown in the attached "Plan of Exploratory Trenches." Low sections of the southwest bank of the existing stream channel, along with the plan of Blackford's 1931 survey, suggested that trenches 2 and 3 would also intersect the historical channel. The location of trench 1 as well was selected largely on the basis of Blackford's plan. Trench 4 was expected to reveal the margin of a meander, while trench 7 was located to intersect what was suspected to be a small tributary stream course.

Metal detection to locate buried metallic artifacts preceded excavation of trenches 2-8. Metal detection along trench 1 was not attempted due to the likelihood of disturbances associated with a former farm lane and a fence in the vicinity. Only along trench 8 were metallic artifacts discovered, and they were found to be modern in origin rather than historic. At the same time, the locations of the trenches relative to the fort were recorded.

The backhoe excavation of the trenches was done and monitored on November 5. Examination and preliminary interpretation of the soil profiles began the same day. Trench 1, east of the fort, revealed an extensive layer of c. 1932 fill at the surface; it also yielded a piece of charred, worked wood, possibly from a relatively deep humic context (1.5+ ft.), about 10-15 feet southwest of the northeast end of the trench. In roughly the same area and at about the same depth, a large, flat stone was found which probably derives from a farmer's lane which historical documentation indicates was located nearby (Harrington 1957:28). Towards the southwest end of the same trench, a drain tile was discovered 3+ ft. below grade, immediately above a "cemented" gravelly layer overlying lacustrine clay. Water-saturated, grassy plant material was in places preserved at the surface of the gravelly layer, and parts of tree branches and other plant material were present in an overlying silty stratum. With the exception of the gravelly layer and the lacustrine clay, which were for the most part deeper than Harrington's excavations, the stratigraphy was similar to that recorded in Harrington's profile of trench "B," which he excavated in the same area in 1952. The well developed sedimentary soils of this trench suggested that the historical stream channel lay to the northeast, contrary to the 1931 survey's depiction.

In trench 2, directly north of the fort, there was again an overburden of c. 1932 fill. At the east end of this trench, 2 water-saturated tree limbs were found at a depth of approximately 3.5 ft. below grade. Subsequently, in the same area of the trench and at about the same depth, Dr. Cunningham found 2 barrel stave ends, along with pieces of worked wood and bark. The silty context within which these objects were found, overlying a layer of sand, may be the base of a levee which developed fairly rapidly in the aftermath of the 1754 encampment and battle. There is a possible similarity between this context and one containing a considerable amount of bark in revealed in a 1901 excavation east of the fort, although Harrington (1957:22) dismissed the latter context as purely natural and ancient in origin. A wide, deep, but silted-in stream channel (convoluted layers of silt and sand, most elevated sand lens only about 2 ft. below grade),

overlying a basal layer of lacustrine clay, was located in mid-section of trench 2, and a fairly clear levee surface was evident immediately below the c. 1932 fill toward the west end of the trench.

While fill was absent from the north end of trench 3, it had been used in the remainder of the trench to level a east-west trending depression in the trench's mid-section. Centered within the depression there was a drain tile, found in the (former) surface soil of what was presumably the old, silted-in stream channel here -- underlying layers of sand and silt. (It is noteworthy that the trench within which the drain tile had been installed was not in the least apparent.) The basal layer was again lacustrine clay. A fragment of a pressed-glass tumbler (?), made of solarized glass (c. 1875-1915) was noted (but not collected) directly beneath the fill. Trench 4 was evidently peripheral to the historical channel, and no fill had been employed there. A drain tile was, however, present. Beneath the well developed sedimentary soil was the "cemented" gravelly deposit, directly over lacustrine clay at the base of the trench. A mid-twentieth century Coca-Cola bottle was noted in the surface soil of the trench. Trench 5 was excavated across an existing surface depression, and another drain tile was located within the surface soil of the old stream channel from which the depression appeared to derive. Trench 6 was similar, but there was no drain tile. Trench 7 was peculiar in that the soil there below the topsoil was almost entirely a clayey sediment, and contained 2 discontinuous lenses of cemented gravels. At the base of the north end of the trench was another cemented gravelly layer overlying lacustrine clay. Trench 8 revealed more of the channel, but much of it there had been obscured by trenching associated with installation of a water line.

On November 6, Mr. Pousson assisted Dr. Cunningham in recording soil profile data. Park staff were scheduled to backfill the trenches the following day. It is expected that Dr. Cunningham's report will provide more detailed descriptions and interpretations of the profiles, with particular attention to the reflection they provide of the historical stream course. The most notable archeological findings of the monitoring were, of course, the barrel stave fragments and worked wood from a relatively deep context at the east end of trench 2, and the implication of those findings for interpretation of the 1754 cultural landscape and its subsequent evolution. It is also notable that in trenches 3 and 5, drain tiles had been installed, presumably c. 1932, within surface depressions deriving from the original stream course.

SUMMARY

The exploratory backhoe trenching performed in the vicinity of Fort Necessity between November 4 and November 6, 1991, confirmed the presence of a meandering historical stream channel north and northwest of the fort. The discovery, at a depth of about 3.5 ft. below grade, of worked wood and barrel stave fragments likely to derive from the 1754 period, along with the considerable volume of sediment within the channel itself, suggests that the stream channel became increasingly more shallow, presumably due to historical cultivation and deforestation within the watershed, during the period 1754 - c. 1860, when the existing artificial channel was created. The convoluted aspect of the deposits of sand and silt within the historical stream channel is presumed to result from shifts in the precise stream course associated with seasonal and other variations in rates of flow.

REFERENCES

Harrington, J.C.

- 1957 New Light on Washington's Fort Necessity. The Eastern National Park and Monument Association. Richmond, Virginia. (Reprinted 1970, 1977)

Smith, Chuck and Charlie Strickfaden

- 1991 Discussions regarding FONE-5 with Chief Ranger and Ranger at Fort Necessity National Battlefield, Nov. 4-6, 1991.