



Pollen Analysis – Fort Necessity National Battlefield



Fort Necessity is the site of George Washington's first military action and the opening battle of the French and Indian War. On July 3, 1754 the French and their American Indian allies attacked the small stockade called Fort Necessity. After an eight hour battle Washington surrendered.

An important aspect of this battle was that the French and Indians fought from behind the trees at the edge of the meadow. However, after many years of changes historians couldn't tell where the historic tree line was or what the meadow looked like at the time of the battle.

Archaeologists can identify the types of vegetation that were growing in an area by studying the pollen in the soil. At Fort Necessity pollen answered an important question, "Where was the tree line?"

Point it out on a map.



Explain how it was discovered.

- The original location of the fort was discovered by archaeology in 1953.
- Cores of soil were taken every 20 feet in a line. Then using a microscope the pollen in the soil was looked at to see what plants were growing in that location in the 1700s.
- The location where the pollen soil changed from grasses and bushes to oaks and other trees indicated where the historic tree line was located.



Microscopic view of oak pollen.



Describe some of the information from the past that has been found at the site.

- The tree line was located and it was determined that the trees were mostly oaks.
- Where the fort was located was very wet. Cattails and other wetland plants were growing there.

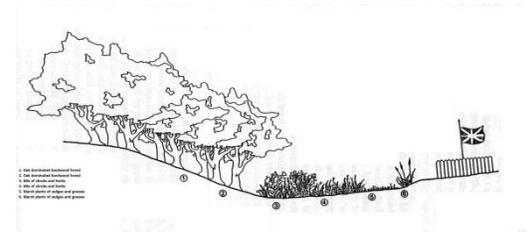
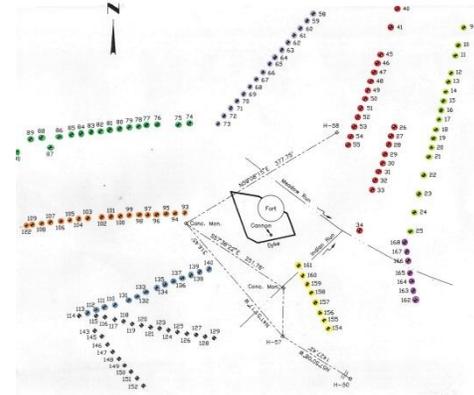


Illustration of the oak tree, shrubs and marsh vegetation surrounding Fort Necessity.

Explain how the information gained from the study of this sites answers questions that archaeologists are asking.

- The archaeologist wanted to know where the historic tree line was. They drilled cores of soil in eight lines. Each line had seven to 18 cores taken.
- In the lab the pollen was identified.
- When the pollen showed a change from grass and shrub pollen to oak and other tree pollen that indicated the location of the forest/meadow tree line.



Map of eight lines and all the locations where cores were taken for pollen analysis.

Explain how the information may be important for modern people.

- Fort Necessity is open to the public. It is hard for people to understand the battle without know where the trees were that the French and Indians used as cover. This archaeology allowed the park to identify the tree line for the visitors.



The arrows point to signs that show visitors where the historic tree line was located.

To learn more:
Fort Necessity National Battlefield: www.nps.gov/fone