



## **Stream Restoration/Wetland Installation**

**Big Bone Lick State Park, KY - \$100 K - \$200K**

**Overview:** This project was done in a highly sensitive area. Part of the excavation was near endangered plants, and other part required an archeologist onsite full time. Big Bone is one of the largest Woolly Mammoth bone finds in North America. WQSi designed and restored two banks of the high flowing tributary stream using soil wrapping, brush layering, live staking and logging, riffles, and J-Hooks. We removed a service bridge, three earthen dams, and two ponds. We restored and relocated some areas of the creek and created a small wetlands.

### **Scope:**

- Removed three earthen dams
- Excavated the stream valley to original topography
- Excavated and regraded the site for the restoration of natural stream valley
- Installed live staking and logging along the bankfull elevation of stream and valley
- Created wetland basin
- Repaired and reconstructed approx 300 feet of Tributary Bank
- Removed an old service bridge crossing Tributary
- Re-vegetated the Tributary Bank's indigenous species

### **Key Issues:**

- Utilities – Gas main crossed under the stream
- Archeological sensitive area

### **Lessons Learned:**

- In working with Northern Kentucky University the entire project was field designed. There was an elevation requirement to maintain enough cover over the gas main crossing. Because this project was a time and materials project, after a short time on the project, it was evident that a soil balancing survey must be done for the sake of efficiency. We encouraged NKU to spend a little money to have professional surveyors layout the site for a neutral soil balance. We used this initial layout and tweaked it to look more like a natural valley stream. This saved our client thousands of dollars.