



Exploring the Migration of the Roanoke Colonists

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INTRODUCTION

There are federal guidelines for archeological investigations. Archeology and Historic Preservation; Secretary of the Interiors Standards and Guidelines (48 FR 44716-44742, September 29, 1983) provides national general regulations for researchers. Cultural, natural, and historic landscape features, artifacts, and historic background information may be used to determine archeological site boundaries. The research team, this year, focused on Phase One, Identification. Background research for the study included previous archeological research that had been performed by our mentors and others. Mr. Fred Willard had a collection of historic maps of the projected sites. In the beginning of the research program, Mr. Willard showed the research team maps, copies of deeds, and other historical documents. A conventional survey may include an archeological site inventory, cultural resource reports, residents and people with local knowledge, archeological site and structures inventory, archival map research and local county histories.

In our research, we addressed the federal guidelines for archeological investigations and used modern day technology to assist in our progression. With the technological advances that occur in the field of science everyday, we are fortunate to be able to utilize these advancements as an aide in archeological studies. The combination of archeology and technology provides us with a dynamic opportunity to delve into the depths of American history using state of the art remote sensing applications.

Detection of archaeological sites may be accomplished by several means:

1. By visual aerial reconnaissance
2. By the use of remote sensors as aerial cameras, thermal infrared scanners, multispectral scanners, and space-borne radar.

Remote sensing has proven to be useful in locating both surface and subsurface archaeological features. Much of human history can be traced through the impacts of human actions upon the environment. The use of remote sensing technology offers archeologists the opportunity to detect these impacts which are often invisible to the naked eye.

Trying to locate archaeological sites is limited by several factors:

1. It has to be small enough to be seen and comprehended from visible remains
2. It has to be visible and recognizable in spite of subsequent human activities and constructions
3. It has to be recognizable even after a long exposure to the effects of nature, such as weathering and erosion

Remote Sensing can overcome the aforementioned limitations:

1. Very large sites can only be seen in its entirety
2. Patterns of sites that may not be noticed or understood at ground level may be viewed at another perspective
3. Subtle variations in the soil color, in the density, height, or types of vegetations, or patterns of shadows may give suggestions to the underlying buried features.

The types of remote sensing imagery we used in our research consisted of the following:

Light Detection And Ranging (LIDAR)

- Operates at Optical Wavelength

Radio Detection And Ranging

- Operates at Radio Wavelengths (1 cm - 1 m)

Ground Penetrating Radar

- Detects Inconsistencies Underground (1 ft – 30 ft)

Shuttle Radar Topography Mission

- Displays Topographic Imagery

IKONOS

- Provides Optical Imagery

