

**Preliminary Archaeological Precontact Site Sensitivity Analysis and GIS Mapping for the
Vermont Agency of Natural Resources**

ARTHUR DAVIS WMA

Submitted to:

**Linda Henzel
Vermont Department of Forests
Parks and Recreation
103 S. Main Street
Waterbury, VT 05671-0601**

Submitted by:

**CONSULTING ARCHAEOLOGY PROGRAM
UNIVERSITY OF VERMONT
112 University Heights
Burlington, VT 05405**

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Introduction

The preliminary archaeological analysis presented here ranks areas within the Arthur Davis WMA based on their potential to contain precontact period archaeological sites. Precontact period sites are locations with evidence of Native American settlement and/or resource exploitation that dates to before the arrival of Europeans, or between roughly 9,000 B.C. and A.D. 1600. While it is impossible to predict exactly where these sites are on the landscape and, where present, which of these sites are the most significant, this analysis attempts to characterize the areas that have the highest potential to contain such sites. The ultimate goal of this analysis is to provide land managers with generalized sensitivity information that will help lead to the continued preservation of non-renewable cultural resources on state-owned lands.

This analysis is preliminary because of the limitations imposed by the available datasets used in the Geographic Information System (GIS) model (e.g., the low resolution digital elevation data), the inability of this or any computer model to account for all variables that may have influenced the way humans used the landscape, and because the accuracy of the sensitivity maps have not been evaluated in the field through visual inspection or subsurface testing. These maps can and should be revised whenever new data becomes available, whether that new information comes in the form of more accurate base maps, addition of new sensitivity criteria to the computer model, or first hand inspection of specific parcels. As a result of the preliminary nature of the maps that are included, the boundaries of sensitive areas should be viewed as rough estimates that can be used to guide land use practices in broad terms. The key to the scoring of archaeologically sensitive areas is presented below in Table 1. Please refer to the background sections and their appendices (on file with District Managers) for a more detailed discussion of the overall sensitivity project and specific details of the GIS analysis.

Table 1. Key to the scoring of areas with precontact archaeological sensitivity within the Arthur Davis WMA

Score	Sensitivity Level	Color	Management Recommendation
32-128	High	Red	Most likely will require field inspection unless area can be avoided
20-32	Medium	Orange	May require field inspection, based on field manager's knowledge of area
10-20	Low	Dark Yellow	May require field inspection, based on field manager's knowledge of area
0-10	Very Low	Light Yellow	May not require field inspection, based on field manager's knowledge of area
<0	Not sensitive	No color	No work required

Arthur Davis WMA

As is discussed in Appendix 2, an area's sensitivity in this GIS is heavily influenced by its proximity to water. As such, the largest area of archaeological sensitivity in the Arthur Davis WMA is associated with Reading Pond in the west, Broad Brook in the north, and a branch of Alder Meadow Brook in the southeast (Figure 1). The steep mountain slopes throughout the area has minimized the amount of sensitivity overall, and has circumscribed sensitivity to those areas immediately bordering mountain streams. Therefore, those areas that score medium and low sensitivity in the model may require a site inspection to determine the true nature of these areas, since it is possible that archaeologically sensitive areas are not brought into focus by the resolution of the data.

The VDHP's predictive model is primarily ecologically based. One shortcoming of ecologically based predictive models is the inability to incorporate ideologically based stimuli for human behavior. Early historic accounts in Vermont, and elsewhere, often describe the veneration for natural landforms by Native Americans. In Vermont, for instance, Abenaki creation stories are intimately tied to descriptions of the natural surroundings, and account for the existence of Rock Dunder, Split Rock, and the lower falls of Otter Creek, to name a few (Haviland and Power 1994). As a result, it is likely that prominent mountain peaks, and other geological features within the Arthur Davis WMA were of ideological importance to Native Americans. However, it is very difficult to quantify the ideological motivations in human behavior, and therefore these variables are left out of this, and most, predictive models. Nonetheless, background research may be able to shed light on the significance of such geological features, and should be taken into consideration, even though such landforms may not score high in this predictive model.

Potential Indicators of Archaeological Sensitivity

A list of expected site types in Vermont, their characteristics and typical locations was created by Peter Thomas for the Vermont Historic Preservation Plan. The site type list is used here as a guide for district managers to better understand the types of precontact archaeological resources that they may encounter within their districts. The site type list is summarized below in Table 2.

Within the Arthur Davis WMA, areas that could be archaeologically sensitive that district managers should identify include, broad, level terraces along the margins of Reading Pond, and intermittent streams, or ancient, dry stream channels associated with Reading Pond, such as Reading Pond Brook. The heads of Alder, Bailey, and Darby Brooks, as well as any terraces along their margins also are potentially sensitive. In fact, an ARA of a potential snowmobile trail was carried out by the UVM CAP in November of 2003 along a portion of Bailey Brook, just east of Brown's School Road in Reading (Knight 2003). The sensitive area consisted of the terraces, both upper and lower, on either side of Bailey Brook east of Brown School Road, to a point on the southern terrace beyond the wooden wetland crossing and up the small hill, where the trail cut veers south and away from Bailey Brook. At this point the trail cut is approximately

80-100 m (262-328 ft) back from the edge of the terrace, in an area of undifferentiated, level topography. This area was identified as highly sensitive in the predictive model (see Figure 2). Other potentially sensitive areas include natural springs, or possible rock outcrops of quartzite, rhyolite, or other fine-grained stone, which may have been quarried in the past for the raw materials to make stone tools, and which may be known by district managers. The geologic formation of the area includes the Moretown member of the Missisquoi formation, which includes quartzite seams (Doll 1961). These may be located in or near to the western extreme of the Arthur Davis WMA, and may be exposed in places. As a result of these factors the site types expected in the Arthur Davis WMA may include small residential camps, bedrock quarries and quarry workshops, kill sites, and find spots (see Table 2).

Table 2. List of expected site types in Vermont, their characteristics, and expected locations.

Site Type	Characteristics	Location
Large Base Camp	May contain numerous areas of artifact concentrations 5-10 m in diameter, evidence of more permanent habitation: remains of hearths, thousands of stone tools, and cover areas of several acres or more.	Large river valleys with high densities of food resources and productive soils for horticulture/agriculture.
Small Residential Camps	One or more areas of artifact concentrations 5-10 m in diameter, with low to moderate densities of stone tools. Evidence of more short-term seasonal habitation	Open air sites on level terraces adjacent to rivers, streams, and wetlands. Some may occur in rock shelters.
Bedrock Quarries	Modified outcrops of high quality (fine grained) quartzite or chert. Large quantity of flaking debris and stone tools in various stages of production on talus.	Where outcrops of high quality quartzite and chert are exposed, on both vertical faces and level exposures.
Quarry Workshops	Large quantities of early stage lithic reduction debris, little long term occupation debris.	On level areas near bedrock quarries.
Kill Sites	Specific tools associated with the killing and preparation of game.	Anywhere.
Burial Sites	Where cremations and inhumations are found, unique religious, nonutilitarian goods found.	Extremely rare, probably associated with large base camps or in specific environments (e.g. gravel knolls near wetlands).
Find Spots	Isolated tools and debitage	Anywhere.

Historic Cultural Resources

There are no historic properties from within the Arthur Davis WMA that have been listed on either the National or State Registers of Historic Places, although the Calvin Coolidge State Park, which may border the Arthur Davis WMA in the northwest, was submitted for listing on the National Register in April, 2001 (Figure 2). Listed on the state register however, is the Syndicate Farm, located along Syndicate Road bordering the Arthur Davis WMA in the south.

Besides the State and National Registers, three historic sites, recorded in the Vermont Archaeological Inventory (VAI), are located along Reading Pond Road, in the southwestern section of the WMA (see Figure 2). Historic sites VT-WN-298, 299, 300, and 301 were identified by the Archaeology Consulting Team, Inc., in 2000 as part of a field inspection for the management plan of the Vermont Department of Fish and Wildlife (Frink and Boulanger 2001). Site VT-WN-298 consisted of a stone wall and multiple stone foundations, suggestive of a residence with associated barn (Frink and Boulanger 2001). Site VT-WN-299 consisted of

several cellar holes, a standing stone wall and remnant plantings of Snowberry bushes (Frink and Boulanger 2001). Site VT-WN-300 consists of stone foundations larger than the previous two sites. A remnant apple orchard also was associated with the site (Frink and Boulanger 2001). The integrity of these three historic sites is good. Finally, site VT-WN-301 consisted of three or four stone foundations. No other remains were identified, which may be due to historic activities such as logging and off-roading in the vicinity of the site (Frink and Boulanger 2001). As a result of these historic activities, the integrity of site VT-WN-301 is poor.

Finally, located approximately 1 km west of the southwestern limits of the Arthur Davis WMA, in the Camp Plymouth State Park, historic site VT-WN-106, which consists of a house, barn, and associated cellar holes is located. Aaron Hurst, technician for the Springfield District, sent the UVM CAP several GIS shape files of historic cultural resources within the Arthur Davis WMA. These included historic area polygons (see Figure 2). The extent of impact of these historic areas cannot be determined from the available data. Only in one instance does the historic area encompass a highly sensitive area, along the edge of Reading Pond and Reading Pond Brook.

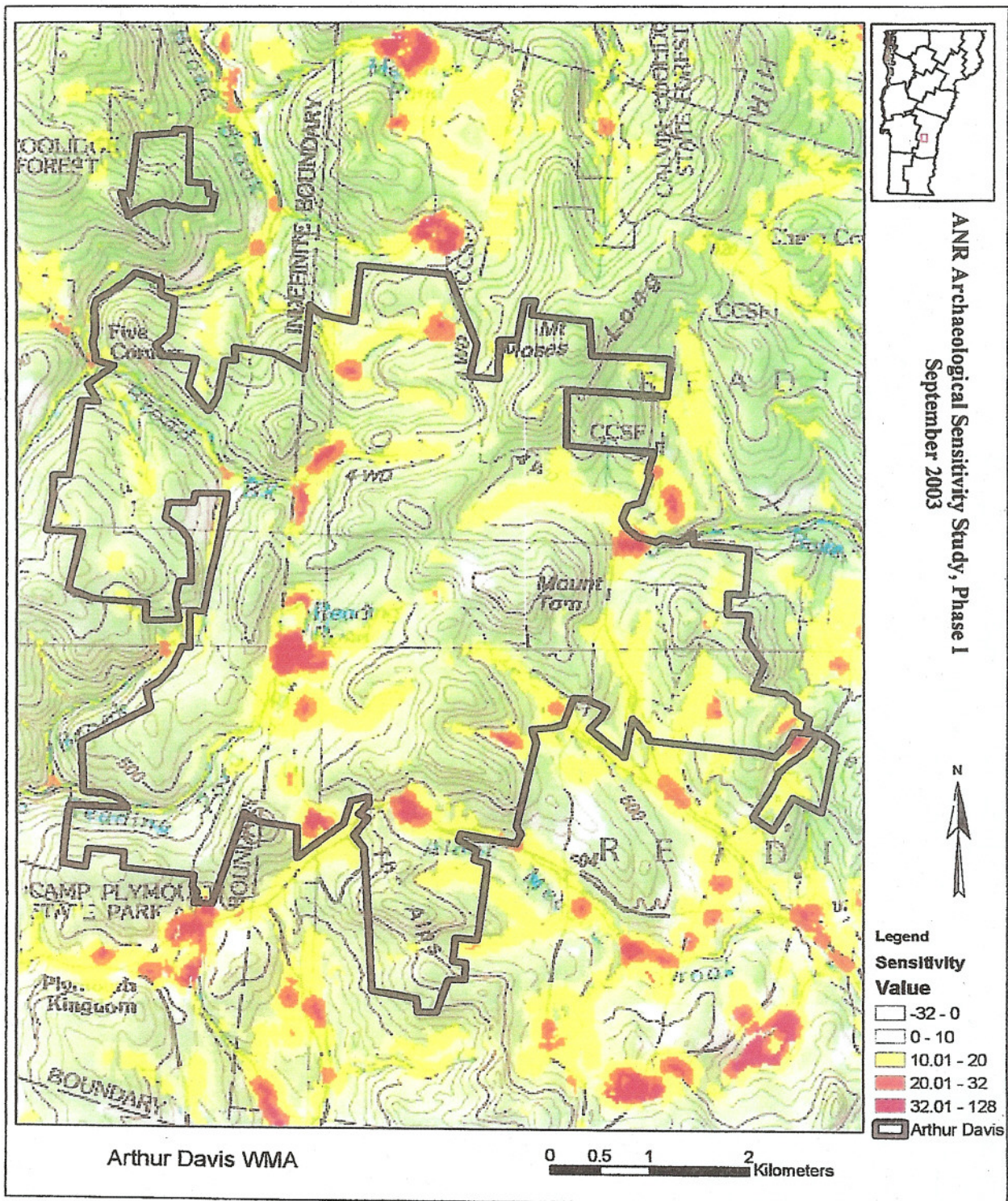


Figure 1. Map showing the archaeological sensitive areas of the Arthur Davis WMA, Windsor County, Vermont.

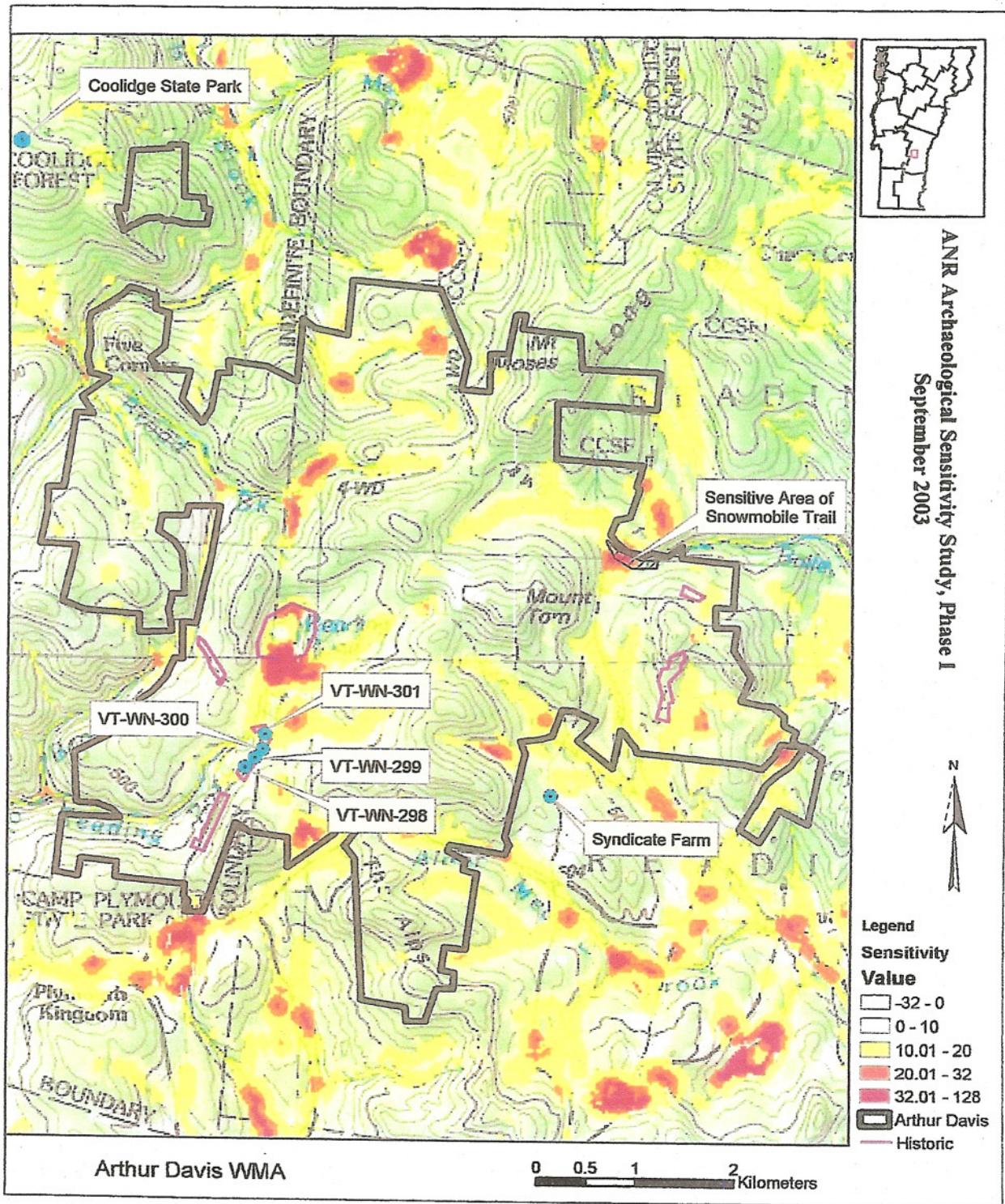


Figure 2. Map showing the archaeological sensitive areas and historic homestead of the Arthur Davis WMA, Windsor County, Vermont.

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