

Appendix K

Archaeology Study

**CLYDESDALE WIND FARM:
ARCHAEOLOGICAL DESKTOP STUDY**

Heritage Research Permit A2011NS103

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Executive Summary

Laird Niven of Stantec conducted an archaeological desktop study of the area designated for the proposed Clydesdale Wind Farm in October of 2011. This desktop study was restricted to the consultation of historical documents at Nova Scotia Archives and Records Management as well as Dalhousie and Saint Mary's University Libraries and of the Maritime Archaeological Resource inventory managed by Heritage Division of the Nova Scotia Museum. The purpose of the desktop study was to give an initial overview of archaeological potential within the study area in order for the client to make management decisions based on the finding. It is not intended to be a full archaeological impact assessment.

This desktop study illustrates the historical settlement of the study area which dates from sometime in the late eighteenth century through the nineteenth century. This long history of settlement indicates that there is a high potential within the study area for archaeological resources dating to the historic period. There is also the potential for encountering First Nations resources, with elevated potential being in valleys and along rivers with mountain and hilltops having the lowest potential. It is recommended that an archaeological pedestrian survey be conducted over the complete study area before the project can proceed.

Introduction

The purpose of this archaeological resource impact assessment is to determine if there are any archaeological resources that might be present in the study area and if there are, to recommend a mitigation strategy if required. This assessment was carried out under Category C Heritage Research Permit A2011NS103.

Methodology

In order to have a workable understanding of the archaeological potential of the study area, historical maps, manuscripts and other published material were consulted at Nova Scotia Archives and Records Management, as well as Dalhousie and Saint Mary's University Libraries in Halifax. Also included in the historical background is an inventory of previously identified archaeological sites within the study area as documented in the Maritime Archaeological Research Inventory, held and managed by the Nova Scotia Museum's Heritage Division.

Development Area

The study area for the Clydesdale Wind Farm project is situated in both Pictou and Colchester counties. The study area consists of a larger designated impact area with the precise locations of the turbines indicated and numbered. The study area extends from the 104 highway between Dalhousie Mountain and Mount Thom northwest to the Earltown area (Figure 3.1). A total of 37 wind turbines are proposed for this development, which dictates the area focused on for this impact assessment. It should be noted that only the turbine locations have been taken into consideration and not linear development features such as access roads and transmission lines. These would have to be the subject of a separate archaeological assessment.

The study area is located within three of Nova Scotia's Theme regions; Cobequid Hills (311), Pictou-Antigonish Highlands (312) and Dissected Margins (320a-Waugh's River). The first of these regions, Cobequid Hills, consists of soils which "are stony, usually shallow, and extremely acidic, gravelly, sandy loams"¹. Rock outcrops are common in this area as bedrock is within half a meter of the surface over much of the region and it is covered mostly by the Cobequid series. This well-drained, sandy loam is an excellent forest soil and the cool, moist climate is responsible for the accumulation of colloidal organic matter in these soils. Wyvern soils are found along the northern edge of the Cobequid Hills and large sections of these soils were accessible to early settlers who cleared the land. Many of these have reverted to forest, while

¹ Davis and Browne, 1996.

others are being used for blueberry production. Hebert soils can be found around lakes within this theme region.²

In terms of plant species present in this area; Sugar Maple, Yellow Birch, American Beech forest can be found in conjunction with Balsam Fir and Red and Black Spruce on the top plateaus of the Cobequids while the areas with poor drainage depressions support Balsam Fir and Black Spruce. Many parts of Colchester County that were once cleared for agriculture are now blueberry fields while others have been cleared more recently. There is a variety of ground and shrub vegetation with some more unusual arctic-alpine and Alleghanian which can be found in cool, moist ravines and within certain types of forests. Some of the common animal types include deer and moose, but animals and plants at home in fertile wetlands are not abundant in this region. Bobcats and coyotes are increasingly found in this region as they hunt for Snowshoe Hare. The Great Horned Owl, Goshawk, Red-tailed Hawk, Barred Owl, Common Raven, Pileated Woodpecker, Ruffed Grouse, Grey Jay and chickadees can all be found in this theme region. While Brook Trout is the most common of the fish species found in this area, Brown Trout and Atlantic Salmon are also found in many small headwater streams.³

The second theme region, Pictou-Antigonish highlands, includes four primary soil types. Cobequid soils are present in the southeastern sector of Pictou County and these soils are stony or sandy loams composed of diorite, felsite, syenite, and granite. Barney River soils are often finer in texture and less stony than other soils while Kirkmount soils are made up of schists, hard sandstones, and slates. Thom soils are associated with tills derived from sandstone and harder metamorphic rocks.⁴

Yellow Birch, Sugar Maple, American Beech, Red Spruce, White Spruce, Eastern Hemlock, and Balsam Fir are the most common tree species found within this theme region with white Spruce colonizing old farmlands in the area. While many of the other plant and animal species are very similar to those present in theme region 311, freshwater fish found in this region can include White Sucker, Brook Trout, sticklebacks, Golden Shiner, Yellow Perch, and Banded killifish. Davis and Browne (1996) note that Highland Scots historically settled in many of the highland areas, using the marginally productive soils for subsistence farming. Much of this area is now managed for forestry as most farmlands were abandoned and the local forest regenerated.⁵

The last theme region in regard to the study area is Dissected Margins (320a: Waugh's River). Previously discussed Cobequid soils are present at higher elevations in this region, with a well-drained loam called Westbrook soils as well as the previously mentioned Wyvern soils making up the rest of the region. In terms of plant species, Balsam Fir, Red Spruce, White Spruce, Red

² Ibid.

³ Ibid.

⁴ Ibid.

⁵ Ibid.

Maple, and birch are the more common trees. The animal life that is present in this area is very similar to both of the previously mentioned theme regions and the history of land use in this area echoes that of theme region 312.⁶

Historical Background

Recorded Archaeological Sites

First Nations

While there are no First Nations sites recorded within or surrounding the study area, it is well known, and has been noted since the earliest written accounts of the area, that the Mi'kmaq were present in Pictou Harbour as well as the river valleys throughout Colchester and Pictou Counties⁷. These areas would have been important to First Nations groups as both transportation routes and food sources are available in these areas. For this project a desktop study is not sufficient to determine the First Nations' archaeological potential within the study area and it is recommended that an extensive pedestrian survey be conducted in those areas that will be negatively impacted.

Historic

While there are no recorded historic archaeological sites within the study area, the Maritime Archaeological Resource inventory lists seven archaeological sites recorded as being in the area surrounding the study area. Both survey and speaking to local landowners led to these sites being recorded between 1997 and 2008. All of the identified archaeological sites date to the historic period and are of a residential/settlement and agricultural nature. While none of these sites are directly inside the development area, they are representative of some of the types of archaeological sites that are potentially present within the study area, which has not previously been the subject of any archaeological study.

Historic Background

Some of the earliest records of a French presence in the study area state that settlers probably came to Pictou County between 1725 and 1750.⁸ These accounts state that while settlement seems to have been concentrated in Merigomish and the French Channel area, the English that later settled Pictou County would find sporadic evidence of earlier French settlement outside of these areas.⁹ Because of these accounts and the fact that the true extent of the French presence in both Pictou and Colchester counties is unknown, it is possible that there may be some evidence of a French presence in the study area.

⁶ Ibid.

⁷ Cameron, 1972 and Patterson, 1877.

⁸ Cameron, 1972 p.4.

⁹ Patterson, 1877. pp 37-40.

English settlers began coming to Nova Scotia in the early 1760's, and historical documents indicate that the first big wave of settlement was associated with the Philadelphia Grant. This grant was given to a group of 14 men, primarily from Philadelphia, of approximately 200 000 acres on October 31st, 1765.¹⁰ Many other land grants were given to people from England and the eastern United States at this time, signalling the early stages of a major wave of settlement in this area. In June of 1767 the *Hope*, a ship sent from Philadelphia, brought 6 families to Pictou Harbour. These families settled in the Mount Thom and Mount Ephriam areas and the names of these families (Harris, Patterson, McCabe, Rogers, Cumming and one family of unknown name) can be seen in these communities to this day.¹¹ Records show that these settlers brought individuals of African descent with them to Pictou as 'chattel'.¹² The *Hector*, a ship from Scotland, brought just under 200 immigrants to Nova Scotia who arrived in Pictou on September 15th of 1773 and settled on the land that was allotted under the Philadelphia Grant.¹³

Evidence of these settlements can be seen by looking at Crown Land Grant Maps (Figure 2), the A.F. Church maps (Figure 3) and many historical records. These indicate who lived on which parcels of land, how large the plots were, and often where the main houses were located. In addition to these main residences, barns, outbuildings, churches, schoolhouses, mills, forges, cemeteries and other buildings were constructed in the study area.¹⁴ The Pictou County settlement features shown on the A.F. Church map are illustrated in Figure 3 alongside the approximate turbine locations. The names on the Church map include McCulloch, Dinwoodie, Creighton, McKeith, McLeod, Munro, and McIntosh amongst others. The 1879 Meacham map seems somewhat more accurate than the Church map and shows the extent of all the land grants as well as the owner's name at the time. What the Meacham and Church maps do tell is that there was extensive Scottish settlement throughout the study area in the mid-to late-nineteenth century.

While some of these properties still remain in use, others were abandoned over the years for various reasons. All of these historical records illustrate the high potential for archaeological resources within the study area.

¹⁰ Patterson, 1877 pp. 48-52 and Meacham & Co., 1879 p.6.

¹¹ Patterson, 1877 p.55-56.

¹² Cameron, 1972 p.8.

¹³ Patterson, 1877 pp. 79-82 and Meacham & Co., 1879 pp. 7-8.

¹⁴ Cameron, 1972.

Results and Discussion

Both the historical documentation and the archaeological work done in this area to date demonstrate the potential for further archaeological resources within the study area. While the potential for First Nations resources varies based on location in the landscape as well as the availability of cultural resources, the potential for encountering these resources exists within the study area.

The documentary and archaeological records both show the history of settlement patterns in Pictou County and more specifically within the study area. Settlement began in the mid eighteenth century with a small number of French settlers and intensified during the late eighteenth and early nineteenth centuries. Immigrants came from the eastern US, England and Scotland including groups of settlers on both the Hope and the Hector. The historical archaeological potential within the study area is considered to be high.

Conclusion and Recommendations

As the historical documents and sites recorded in the MARI database clearly illustrate, the study area has high potential for historical resources associated with English and Scottish settlement of the area. There is also an undetermined potential for First Nations resources associated with the landscape and natural resources available within the study area. It is because of this archaeological potential that it is recommended that an archaeological survey be undertaken by qualified archaeologists before any ground disturbance take place.

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Illustrations

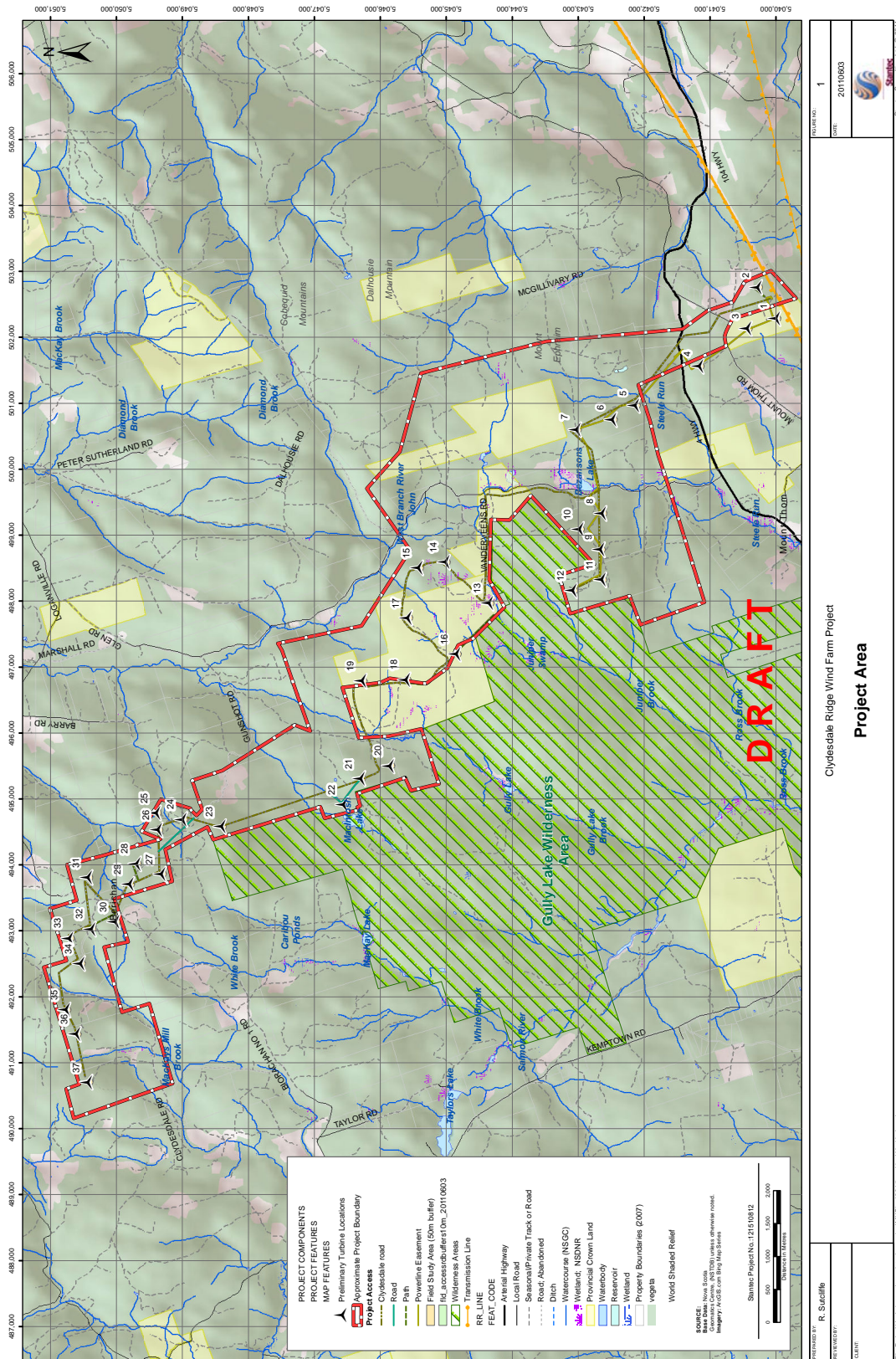


Figure 1: Study area outlined in red with the numbered turbine locations (subject to change).



Figure 2: Crown land grant index maps superimposed over the study area.

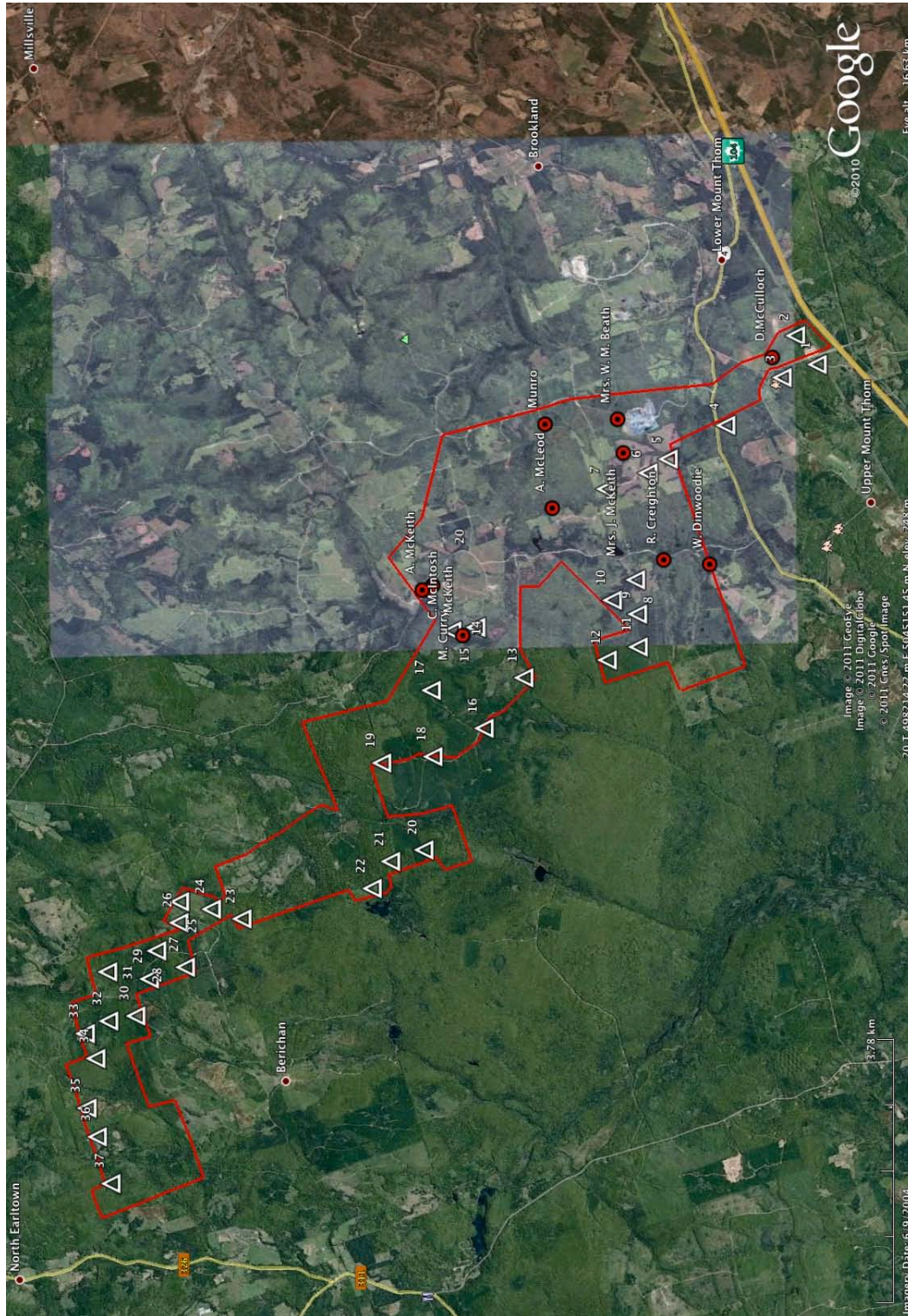


Figure 3: Selected dwelling from the Pictou County A.F. Church map (in red) within the study area.

