Ministry of Tourism, Culture and Sport

Confirmation Letter

February 14, 2013

Ministry of Tourism, Culture and Sport

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Ontario

February 14, 2013

Thomas Irvin
c/o Jim Wilson
Stantec Consulting Ltd.
2781 Lancaster Road Suite 200
Ottawa, Ontario
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RE: Review and entry into the Ontario Public Register of Archaeological Reports of the marine archaeological assessment report entitled: "**Underwater Archaeological Assessment, Proposed Submarine Cable Route & Dock Facilities — Amherst Island Wind Energy Project, North Gap between Amherst Island and Millhaven, Ontario**", Dated January 23, 2013, Filed by MTCS Toronto Office on January 28, 2013, MTCS Project Information Form Number **2012-001-002-2012**, OPA Reference Number **FIT-FUT3NOX**, MTCS File Number **HD00579**

Dear Mr. Irvin:

This report was submitted to this ministry as a condition of licensing under the Ontario Heritage Act.[1] The ministry reviewed the report to determine whether the licensed marine archaeologist met the terms and conditions of their licence and whether the archaeological fieldwork and report recommendations are consistent with the conservation, protection and preservation of the cultural heritage of Ontario.[2]

The report documents the assessment of the study area as shown in the Project Area Location map, Appendix A, figure 1, of the report and recommends the following:

Project Study Area

The identified targets of archaeological concern within the Project Study Area, AT2 and AT4, are outside the proposed submarine cable route or the proposed docking facility option locations. The following recommendations are made for each target:

AT2 – The Skiff Wreck Site, BbGe-28: The proposed docking facility and submarine cable will not impact this location. However it is recommended that this site be avoided with a minimum buffer of 100 metres surrounding the wreck.

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[1] *This letter constitutes the Ministry of Tourism, Culture and Sport's written comments where required under section 22 of O. Reg. 359/09, as amended (Renewable Energy Approvals under the Environmental Protection Act), regarding the archaeological assessment undertaken for the project. Depending on the study area and scope of work of the archaeological assessment as detailed in the report, further archaeological assessment reports may be required to complete the archaeological assessment for the project under O. Reg. 359/09. In that event, ministry comments under section 22 of O. Reg. 359/09 will be required for any such additional reports.*

[2] *In no way will the ministry be liable for any harm, damages, costs, expenses, losses, claims or actions that may result: (a) if the report or its recommendations are discovered to be inaccurate, incomplete, misleading or fraudulent; or (b) from the issuance of this letter. Further measures may need to be taken in the event that additional artifacts or archaeological sites are identified or the report is otherwise found to be inaccurate, incomplete, misleading or fraudulent.*

AT4 – Unidentified Timber Feature: It is recommended that this feature be avoided with a minimum buffer of 40 metres surrounding the feature.
Targets AT1, AT3, AT5 and AT6 are considered sufficiently documented and no further archaeological assessment is recommended. No archaeological buffer is recommended for any of these targets.

North Amherst Wreck

The shipwreck located during the MTO bubbler line survey is likely from the 19th or 20th century. While this site is situated outside of the submarine cable route, it is recommended that the site be avoided with a 100 metre buffer.

Based on the information contained in the report, the ministry is satisfied that the fieldwork and reporting for the archaeological assessment are consistent with the terms and conditions for a marine archaeological licence. This report has been entered into the Ontario Public Register of Archaeological Reports. Please note that the ministry makes no representation or warranty as to the completeness, accuracy or quality of reports in the Register.

Please feel free to contact me if you have any questions.

Sincerely,

Andy Schoenhofer
Archaeology Licensing and Information Officer

c. Mr. Sean Fairfield, Algonquin Power Co.
Mr. Vic Schroter, Ministry of the Environment

Underwater Archaeological Assessment

FINAL UNDERWATER ARCHAEOLOGICAL ASSESSMENT Proposed Submarine Cable Route & Dock Facilities – Amherst Island Wind Energy Project

North Gap between Amherst Island and Millhaven, Ontario

Project No. 160960595-208

Prepared for:
Windlectric Inc. (c/o Algonquin Power Co)
2845 Bristol Circle
Oakville, Ontario L6H 7H7

November 30, 2012

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PROJECT PERSONNEL

Project Director	Jim Wilson, M.A. (P001)
Report	Jeffrey Muir (R304); Darren Kipping (R422)
Graphics	Matt Kirkpatrick

Executive Summary

Windlectric Inc. is planning to develop a wind energy project on Amherst Island, Loyalist Township, County of Lennox and Addington, Ontario. In order to facilitate the transmission of electrical power, a submerged cable (115kV) is required to be installed between Amherst Island, and the mainland (near the community of Millhaven, Ontario). In addition to the installation of the submarine cable, there will be the construction of shoreline docking facilities.

Specific sections of the *Ontario Regulation 359/09, Renewable Energy Approvals Under Part V.0.1 Of The Environmental Protection Act* pertain to archaeological resources. In order to meet the conditions of the regulation, Stantec Consulting Ltd. was retained by Windlectric to conduct an underwater archaeological assessment within the area of the planned submerged project components for the Amherst Island Wind Energy Project.

A desktop investigation of the Project Study Area was conducted to determine the potential for submerged archaeological resources within the existing Project Study Area. This assessment included a review of the archaeological context of the area, historical sources, shipping losses within and around the study area, previous academic archaeological study within the area, as well as review and discussion with scuba diving groups who have dove within the Project Study Area.

Based on the results of the desktop assessment the Project Study Area was considered to exhibit potential for previously undiscovered submerged archaeological resources. In order to confirm that no submerged archaeological resources were within the disturbance area of the Project, a sub-surface remote sensing survey was conducted.

The remote sensing survey included a multi-beam sonar investigation as well as spot investigations of identified targets with a Remotely Operated Vehicle. A sub-bottom profile survey was also conducted to determine the nature of the lake bottom within the Project Study Area. This survey resulted in the discovery of one shipwreck within the Project Study Area and one unidentified feature. This wreck has been determined to be a skiff of indeterminate age. It has been registered as the Skiff Wreck Site (BbGe-28) with the Ontario Ministry of Tourism, Culture and Sport (MTCS). No archaeological resources were encountered directly within the proposed submarine cable route or within 80 metres on either side. The unidentified feature consisted of various cut log timbers and associated metal covering. This likely represents a former crib and was not registered with the MTCS.

A secondary survey was conducted outside of the proposed cable route at the request of the Project proponent. The purpose of this secondary survey was to locate an existing Ministry of Transportation bubbler line which runs along the existing Loyalist Township public ferry route. The survey of this area resulted in the discovery of a 19th to 20th century shipwreck (located

approximately 350 metres west of the Project's submarine cable route). This wreck has been registered as the North Amherst Wreck (BbGe-27).

As there are currently no standards or guidelines in regards to underwater archaeological survey within the province of Ontario all underwater archaeological fieldwork was conducted according to the practices and principles of the Nautical Archaeological Society. The Nautical Archaeological Society is an internationally recognized organization with ties to several academic institutions. The underwater archaeological principles and practices outlined have been adopted by numerous governments worldwide.

The underwater archaeological assessment in this report has been conducted to meet the intent of the *Ontario Heritage Act* in regards to the protection of submerged cultural resources and with the guidance of the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011a).

1.0 Introduction

Stantec Consulting Ltd. (Stantec) was retained by Windlectric Inc. (Windlectric) to prepare a Renewable Energy Approval (REA) Application, as required under *Ontario Regulation 359/09 – Renewable Energy Approvals under Part V.0.1 of the Environmental Protection Act* (O. Reg. 359/09). According to subsection 6(3) of O.Reg.359/09, the Project is classified as a Class 4 Wind Facility and will follow the requirements identified in O. Reg. 359/09 for such a facility.

The planned Class 4 Wind Facility on Amherst Island will require the creation of temporary/permanent docking facilities as well as the installation of a submerged submarine cable from the island to an area near Millhaven, Ontario.

In order to proceed with the planned development Stantec was retained to conduct an underwater archaeological assessment of the Project Study Area to ensure that no submerged archaeological resources are impacted through the installation of the submarine cable or docking facilities. The underwater archaeological assessment was conducted according to the Nautical Archaeological Society (NAS) *Principles and Practice* (NAS 2009). The archaeological work conducted and reported on herein was done to meet the intent of the *Ontario Heritage Act* in regards to the protection of submerged cultural resources and with the guidance of the 2011 *Standards and Guidelines for Consultant Archaeologists* (MTCS 2011a).

2.0 Project Context

2.1 DEVELOPMENT CONTEXT

2.1.1 Project Description

The basic components of the proposed Project include up to 36 Siemens wind turbines. The turbine model proposed utilizes the same 36 turbine pad locations that have been subject to the assessment required under REA. The layout includes 34 Siemens SWT-2.3-113 2300 kW and two (2) Siemens SWT-2.3-113 2221 kW model wind turbines. The final layout will result in a total installed nameplate capacity of approximately 56 - 75 MW. The number of wind turbines will be dependent upon final selection of the model of the wind turbine most appropriate to the proposed Project. The proposed Project will also include a 34.5 kilovolt (kV) underground and/or overhead electrical power line collector system, fibre optic data lines from each turbine and/or wireless technology for the communication of data, a transmission line, truck turnaround areas, a submarine cable, an operations and maintenance building, permanent dock, a substation, a switching station, an un-serviced storage shed, one connection point to the existing electrical system, cable vault areas, meteorological tower(s) (met tower(s)), access road(s) to the met tower site(s), and turbine access roads with culvert installations, as required, at associated watercourse crossings.

Temporary components during construction may include staging areas for the turbines, access roads, met tower(s), collector lines and transmission line as well as crane paths, a temporary dock, site office(s), batch plant, central staging areas, and associated watercourse crossings. The electrical power line collector system would transport the electricity generated from each turbine to the substation, along the submarine cable to the mainland and then to a switching station located near to an existing Hydro One Networks Inc. (HONI) 115 kV transmission line.

The Proponent has elected to assess and seek approval for some alternative Project configurations. The Renewable Energy Approval (REA) application process will consider:

- two alternative mainland transmission line routes;
- two alternative switching station locations and corresponding point of common coupling with the HONI line;
- three alternative mainland temporary dock locations along the mainland;
- a submarine cable with three alternative submarine cable routes near the mainland;

- three alternative mainland submarine cable landing locations and corresponding cable vault locations;
- up to three alternative met tower locations; and,
- up to four potential locations for an operations and maintenance building.

Final selection of the sites to be used would be based on the results of consultation activities, detailed design / engineering work, and the conditions experienced during construction.

The only two project components addressed in this Underwater Archaeological Assessment report are:

- Submarine Cable: This cable will be constructed between a location near the community of Millhaven, Ontario and a location on the north shore of Amherst Island. The approximate nominal diameter of the cable is 180 millimetres with an approximate in water weight of 35 kg/m. The cable will not be anchored to the lake bed and it is expected there will be no sway of the cable once it is situated.
- *Temporary and Permanent Dock Facilities*: Dock facilities will generally consist of concrete retaining structures installed on the shoreline with steel piling anchored to the lake bed. The surface of the docks will be reinforced steel.
    - Mainland: Three dock location options are being contemplated.
    - Amherst Island: One dock location option is being contemplated.

2.1.2 O.Reg.359/09

The Renewable Energy Approvals Regulation (O.Reg.359/09) was issued under Part V.0.1 of the *Environmental Protection Act* (2009). The Regulation outlines specific requirements for the approval of renewable energy projects. Certain sections of O.Reg.359/09 pertain to archaeological resources.

Section 20(1) of O.Reg.359/09 states:

> *20. (1) A person who proposes to engage in a renewable energy project shall consider whether engaging in the project may have an impact on any of the following:*
>
> *1. An archaeological resource at the project location.*

This assessment has been prepared as per Section 22(2) which ensures that:

> *(a) an archaeological assessment is conducted by a consultant archaeologist; and*

(b) an archaeological assessment report is prepared by the consultant archaeologist mentioned in clause (a) and submitted to the Ministry of Culture.

2.2 ARCHAEOLOGICAL CONTEXT

2.2.1 Project Study Area

The Project Location includes lands on Amherst Island, and a corridor stretching between the Island and the mainland where the submarine cable is proposed. The mainland portion of the Project Location stretches from the mainland shoreline, north of the Invista Transformer Station and is generally bounded by i) County Road 4 to the West; ii) the Canadian National Railway line to the North; and iii) approximately 500 m East of Jim Snow Drive to the East.

The Project Study Area is a small channel between the north shore of Amherst Island and Millhaven, Ontario known as the North Gap (or Upper Gap). This channel is bordered by Amherst Island to the south and mainland Loyalist Township to the north (Amherst Island is also within Loyalist Township). To the southwest of the Project Study Area is a channel known as the Upper Gap, and to the southeast of the study area a channel known as the Lower Gap. To the northeast of the Project Study Area is Parrots Bay.

The Project Study Area is situated in waters ranging from approximately almost 0 metres to 140 metres deep. Recreational divers have stated that the area has a strong current through the deeper water and at times high turbidity results in very poor visibility (personal communication, 2011).

2.2.2 Archaeological Culture History of Terrestrial Eastern Ontario

Overall, archaeological research in many parts of Eastern Ontario has been fairly limited, at least compared to adjoining areas in Southern Ontario and northern New York State, resulting in only a limited understanding of the cultural processes that occurred in this part of the province. The following summary of the prehistoric occupation of Eastern Ontario (see Table 1 for chronological chart) is based on syntheses in Archaeologix (2008), Ellis and Ferris (1990), Jacques Whitford (2008), Pilon (1999) and Wright (1995).

Identifiable human occupation of Ontario begins just after the end of the Wisconsin Glacial period. The first human settlement can be traced back 11,000 years, when this area was settled by Native groups that had been living to the south of the emerging Great Lakes. This initial occupation is referred to as the "Paleo-Indian" archaeological culture.

Early Paleo-Indian (EPI) (11,000-10,400 before present or BP) settlement patterns suggest that small groups, or “bands”, followed a pattern of seasonal mobility extending over large territories. Many (although by no means all) of the EPI sites were located on former beach ridges associated with Lake Algonquin, the post-glacial lake occupying the Lake Huron/Georgian Bay basin, and research/evidence indicates that the vegetative cover of these areas would have

consisted of open spruce parkland, given the cool climatic conditions. Sites tend to be located on well-drained loamy soils, and on elevations in the landscape, such as knolls. However, the taking of large game, such as caribou, mastodon and mammoth, appears to be of central importance to the sustenance of these early inhabitants. Moreover, EPI site location often appears to be located in areas which would have intersected with migratory caribou herds.

The Late Paleo-Indian (LPI) period (10,400-10,000 BP) is poorly understood compared to the EPI, the result of less research focus than the EPI. As the climate warmed the spruce parkland was gradually replaced and the vegetation of Southern Ontario began to be dominated by closed coniferous forests. As a result many of the large game species that had been hunted inthe EPI period either moved north with the more open vegetation, or became locally extinct. Like the EPI, LPI peoples covered large territories as they moved around to exploit different resources. Environmental conditions in Eastern Ontario were sufficient to allow for a Late Palaeo-Indian occupation, although the evidence of such is still very limited.

The transition from the Paleo-Indian period to the Archaic archaeological culture of Ontario prehistory is evidenced in the archaeological record by the development of new tool technologies, the result of using an increasing number of resources as compared to peoples from earlier archaeological cultures, and developing a broader based series of tools to more intensively exploit those resources. During the Early Archaic period (10,000-8,000 BP), the jack and red pine forests that characterized the LPI environment were replaced by forests dominated by white pine with some associated deciduous elements. Early Archaic projectile points differ from Paleo-Indian forms most notably by the presence of side and corner notching on their bases. A ground stone tool industry, including celts and axes, also emerges, indicating that woodworking was an important component of the technological development of Archaic peoples. Although there may have been some reduction in the degree of seasonal mobility, it is still likely that population density during the Early Archaic was low, and band territories large.

The development of more diversified tool technology continued into the Middle Archaic period (8,000-4,500 BP). The presence of grooved stone net-sinkers suggests an increase in the importance of fishing in subsistence activities. Another new tool, the bannerstone, also made its first appearance during this period. Bannerstones are ground stone weights that served as counterbalance for "atlatls" or spear-throwers, again indicating the emergence of a new technology. The increased reliance on local, often poor quality chert resources for chipped stone tools suggests that in the Middle Archaic groups inhabited smaller territories lacking high quality raw materials. In these instances lower quality materials which had been glacially deposited in local tills and river gravels were used.

This reduction in territory size appears to have been the result of gradual region-wide population growth, which forced a reorganization of subsistence patterns, as a larger population had to be supported from the resources of a smaller area. Stone tools designed specifically for the preparation of wild plant foods suggest that subsistence catchment was being widened and new resources being more intensively exploited. A major development of the later part of the Middle

Archaic period was the initiation of long distance trade. In particular, native copper tools manufactured from sources near Lake Superior were being widely traded.

During the latter part of the Middle Archaic (5,500-4,500 BP) a distinctive occupation, or tradition, known as the Laurentian Archaic, appears in southeastern Ontario, western Quebec, northern New York and Vermont. Laurentian Archaic sites are found only within the transitional zone between the deciduous forests to the south and coniferous forests to the north known as the Canadian Biotic Province and are identifiable through the association of certain diagnostic tool types, including ground slate semi-lunar knives (or “ulus”), plummets for use in fishing, ground slate points and knives, and ground stone gouges, adzes and grooved axes. It is thought that there was less reliance on plant foods and a greater reliance on hunting and fishing in this region than for Archaic peoples in southern and southwestern Ontario. Laurentian Archaic sites have been found in the middle Ottawa River valley, along the Petawawa and Trent River watersheds and at Brockville.

The trend towards decreased territory size and a broadening subsistence base continued during the Late Archaic (4,500-2,900 BP). Late Archaic sites are far more numerous than either Early or Middle Archaic sites. It appears that the increase in numbers of sites at least partly represents an increase in population. However, around 4,500 BP water levels in the Great Lakes began to rise, taking their modern form. It is likely that the relative paucity of earlier Archaic sites is due to their being inundated under the rising lake levels.

The appearance of the first true cemeteries occurs during the Late Archaic. Prior to this period, individuals were interred close to the location where they died. However, with the advent of the Late Archaic and local cemeteries individuals who died at a distance from the cemetery would be returned for final burial at the group cemetery often resulting in disarticulated skeletons, occasionally missing minor bone elements (e.g. finger bones). The emergence of local group cemeteries has been interpreted as being a response to both increased population densities and competition between local groups for access to resources, in that cemeteries would have provided symbolic claims over a local territory and its resources.

Increased territoriality and more limited movement are also consistent with the development of distinct local styles of projectile points. The trade networks which began in the Middle Archaic expand during this period, and begin to include marine shell artifacts (such as beads and gorgets) from as far away as the Mid-Atlantic coast. These marine shell artifacts and native copper implements show up as grave goods, indicating the value of the items. Other artifacts such as polished stone pipes and slate gorgets also appear on Late Archaic sites. One of the more unusual of the Late Archaic artifacts is the "birdstone”, a small, bird-like effigy usually manufactured from green banded slate.

The Early Woodland period (2,900-2,200 BP) is distinguished from the Late Archaic period primarily by the addition of ceramic technology. While the introduction of pottery provides a useful demarcation point for archaeologists, it may have made less difference in the lives of the Early Woodland peoples. The first pots were very crudely constructed, thick walled, and friable.

It has been suggested that they were used in the processing of nut oils by boiling crushed nut fragments in water and skimming off the oil. These vessels were not easily portable, and individual pots must not have enjoyed a long use life. There have also been numerous Early Woodland sites located at which no pottery was found, suggesting that these poorly constructed, undecorated vessels had yet to assume a central position in the day-to-day lives of Early Woodland peoples.

Other than the introduction of this rather limited ceramic technology, the life-ways of Early Woodland peoples show a great deal of continuity with the preceding Late Archaic period. For instance, birdstones continue to be manufactured, although the Early Woodland varieties have "pop-eyes" which protrude from the sides of their heads. Likewise, the thin, well-made projectile points which were produced during the terminal part of the Archaic period continue in use. However, the Early Woodland variants were side-notched rather than corner-notched, giving them a slightly altered and distinctive appearance. The trade networks which were established in the Middle and Late Archaic also continued to function, although there does not appear to have been as much traffic in marine shell during the Early Woodland period. These trade items were included in increasingly sophisticated burial ceremonies, including construction of burial mounds.

In terms of settlement and subsistence patterns, the Middle Woodland (2,200 B.C.-1,100 BP) provides a major point of departure from the Archaic and Early Woodland periods. While Middle Woodland peoples still relied on hunting and gathering to meet their subsistence requirements, fish were becoming an even more important part of the diet. Middle Woodland vessels are often heavily decorated with hastily impressed designs covering the entire exterior surface and upper portion of the vessel interior. Consequently, even very small fragments of Middle Woodland vessels are easily identifiable.

It is also at the beginning of the Middle Woodland period that rich, densely occupied sites appear along the margins of major rivers and lakes. While these areas had been utilized by earlier peoples, Middle Woodland sites are significantly different in that the same location was occupied off and on for as long as several hundred years. Because this is the case, rich deposits of artifacts often accumulated. Unlike earlier seasonally utilized locations, these Middle Woodland sites appear to have functioned as base camps, occupied off and on throughout the course of the year. There are also numerous small upland Middle Woodland sites, many of which can be interpreted as special purpose camps from which localized resource patches were exploited. This shift towards a greater degree of sedentism continues the trend witnessed from the Middle Archaic, and provides a prelude to the developments that follow during the Late Woodland period.

There are three complexes of Middle Woodland culture in Ontario. The complex specific to eastern Ontario is known as “Princess Point” most notably represented by ceramics decorated with a stamped zigzag pattern applied at various angles to the exterior of the vessel, known as

"pseudo scallop shell". Another common decorative style is the dentate stamp, a comb-like tool creating square impressions.

The relatively brief period of the Transitional Woodland period is marked by the acquisition of cultivar plants species, such as maize and squash, from communities living south of the Great Lakes. The appearance of these plants began a transition to food production, which consequently led to a much reduced need to acquire naturally occurring food resources. Sites were thus occupied for longer periods and by larger populations.

The Late Woodland period in southern Ontario is associated with societies referred to as the Ontario Iroquois Tradition. This period is often divided into three temporal components: Early, Middle and Late Iroquoian (see Table 1). In eastern Ontario, especially in the Ottawa River Valley, there is considerable overlap of people continuing to practice a hunting and gathering economy and those using limited horticulture as a supplement to gathered plants. For the most part, however, classic Late Woodland sites in eastern Ontario are limited to an area at the east end of Lake Ontario and along the St. Lawrence River valley. Middle Iroquoian sites have not been identified east of Kingston.

During the Late Iroquoian period a distinctive material culture emerges at the east end of Lake Ontario and along the St. Lawrence River up to Québec City, known as the St. Lawrence Iroquois (SLI). SLI sites are characterized by large semi-permanent villages and associated satellite settlements. The inhabitants of these villages and satellites practiced horticulture of staple crops which made up the bulk of their diet. Other food resources were hunted, fished and gathered. SLI village sites can be extensive, up to 10 acres or more in size and composed of a number of longhouse structures. Special purpose satellite settlements, such as hunting and fishing camps, are smaller in area and in the number and size of structures within the settlement. The inhabitants of these villages and satellites practiced horticulture of staple crops which made up the bulk of the diet. Other food resources were hunted, fished, and gathered (Pendergast 1974; Jamieson 1990; Stewart 1992). Late Woodland village sites can be extensive, up to 10 acres or more in size and composed of a number of longhouse structures. Satellite settlements are smaller in extent and in the number and size of structures within the settlement. SLI sites are located, as the name suggests, in territory on either side of the St. Lawrence River, from the east end of Lake Ontario to the vicinity of Quebec City (Jamieson 1990).

Although outside of the Project Study Area, the Upper Gap Site, located on the mainland just north of the Upper Gap, is an important Iroquoian village. The Upper Gap site was inhabited from 700 A.D. to around 1400 A.D. and consisted of a large village area with numerous longhouses which bordered on agricultural lands (Ontario Heritage Trust 2003). The presence of this large village indicates that the area, at least during the period of occupation, was actively inhabited by aboriginal peoples.

2.3 HISTORIC CONTEXT

The waters of Lake Ontario have been extensively travelled during the historic period, first by the early French explorers and fur traders, then in a more regimented fashion by the British. It was the British who decided that an increased presence in British naval vessels was required on the Great Lakes during the start of the American Revolution in the mid 1770's. This force of British vessels was known as the Provincial Marine, and while the vessels were designated as part of the British Naval they in fact acted as a form of coast guard within the Great Lakes Region (Malcomson 2001a).

The Project Study Area is situated within an area well known as a transit route throughout the 18th and 19th centuries. The Project Study Area is situated just west of Kingston, Ontario; a documented 18th and 19th century shipping centre and the base for the British Naval forces in the region. When tensions between the American and British governments were mounting during the early period of the War of 1812 the Provincial Marine decided to construct new fighting vessels at the Kingston Royal Naval Dockyard. It was here the 20 gun wood sloop HMS Royal George was launched in 1809 (Kingston Historical Society 1952). The HMS Royal George is significant in that it was, at that time, the largest fighting vessel on the Great Lakes (Kohl 1997). The HMS Royal George is known to have sailed through the Project Study Area after entering the Upper Gap to flee an attack by a fleet of American Ships (Malcomson 2001b). The vessel was able to flee the pursuing American ships under the command of Commodore Isaac Chauncey (Malcomson 2001b). The American vessels found themselves in the area of Bath, Ontario (just west of the Project Area) where they took it upon themselves to seize and burn the schooner Two Brothers, owned by Benjamin Fairfield (Malcomson 2001b). The wreck of the Two Brothers is not a registered archaeological site, and the location is not known. It may have settled in Bath harbour, or drifted further out, possibly within the Project Study Area.

During the ensuing War of 1812 Kingston was the seat for the British Navy and a series of fortifications were built around it to secure it from an American attack. The War of 1812 ended in 1814 but the influence Kingston was to have upon the Great Lakes did not stop. In 1842 the shipyards at Kingston launched the Mohawk the first iron hulled vessel to travel the Great Lakes (Kohl 1997). It is certain that the Upper and Lower Gaps were used throughout the 18th, 19th and 20th century to gain access to the upper regions of the Bay of Quinte and would have been used as safe harbor during rough weather. The Project Study Area was subject to thick ice, in the past, during the winter months and was thus most likely avoided by shipping traffic during those times.

To the West of the Project Study Area are the upper reaches of the Bay of Quinte. The Bay of Quinte region itself (including the Project Study Area) was a known source of high quality timber for the market in Quebec. An early 1790 account from the Bay of Quinte documents one timber exporter, Samuel Sherwood, as having been the first person to successful transport a load of timber out into Lake Ontario (Flint 1884). Historical documents state that Sherwood lacked the use of any cattle and had to move his load of timber to the water's edge through the use of

tackle (presumably ropes, pulleys and other forms of mechanical leverage). The heavy use of the Bay of Quinte as a timber export centre would have certainly left cultural remains within the waterways of the area.

The north shore of the Project Study Area presents a distinct area of archaeological potential. Highway 33, which runs along the north shore, is a recognized Heritage Highway by the Ontario Ministry of Transportation as it had a significant role in the development of Ontario (Ontario Heritage Trust 2003). Highway 33 became the main terrestrial transit link between the military and commercial interests in Kingston to the farmsteads which existed along the northern shore of the Bay of Quinte. The northern shore of the Project Area was a vital land transportation route, it is likely that loyalist homesteads may have existed backing onto the Project Study Area.

It is likely that Aboriginal peoples visited Amherst Island via watercraft and/or crossing the water during periods of winter ice.

2.4 MARINE ARCHAEOLOGICAL CONTEXT

The assessment of the marine archaeological potential for the Project Study Area considered both prehistoric and historic period resources. Archaeological potential modeling for prehistoric era sites is based largely on the identification of landscape features which are either known to have attracted past habitation or land use, or which appear to have potential for attracting human use. These features include: navigable rivers and lakes; confluences of watercourses; smaller sources of potable water; ridges or knolls that overlook areas of resource potential; outcrops of high-quality stone for tool making; and, most importantly, combinations of these features. In general it has been demonstrated that areas within 200 to 300 metres of watercourses, or other significant bodies of water (Archaeological Services Inc. 1990; Cox 1989), and in particular those areas with multiple water sources (Young *et al*. 1995), are considered to be of elevated archaeological potential. While the Project Study Area does not include any present landforms, the high degree of human activity which is known to occur around water bodies creates a high degree of marine archaeological potential for the Project Study Area. A prime example of this is the previously mentioned Upper Gap Site.

The nature of potential marine archaeological resources within the Project Study Area varies depending on the distance from land. Generally, evidence of past human transport (primarily ships) can be found both within proximity to shore and into deeper waters. Evidence of past human activity generally found along shorelines and not within deeper water can include such items, wharves and piers, refuse locations.

There are currently no registered prehistoric archaeological sites within a one kilometre radius of the Project Study Area (MTCS 2011b).

There are various known shipwrecks surrounding Amherst Island; none of which are located within the Project Study Area (Table 1). The site nearest to the Project Study Area is the William

Jamieson (BaGe-4) which is located to the south west of the Project Study Area off of Barry Point.

Table 1. Registered Marine Archaeological Sites Around Amherst Island

Borden #	Name	Site Type	Cultural Affiliation
BaGe-3	City of Sheboygan	Wreck, ship	Euro-Canadian
BaGe-4	William Jamieson	Wreck, ship	Euro-Canadian
BaGd-6	Cornwall	Wreck, ship	Euro-Canadian
BaGd-8	Mapleglen	Wreck, ship	Euro-Canadian

BeGe-4 William Jamieson. This wreck was registered in the Archaeological Site Database (ASDB) at the MTCS in 1995 by Jonathan Moore of Parks Canada. The wreck was originally identified by recreational scuba divers in the early 1960s but never entered into the official archaeological record. The wreck is situated approximately 300 metres west of the north tip of Barry Point on Amherst Island. The wreck is upright and the hull is intact. It is situated at a depth of approximately 75 feet (or 23 metres) on a level and silty lake bottom; this site has extensive mussel infestation (MTCS 2011b).

The William Jamieson was a two masted schooner built in 1878 at Mill Point, Ontario and was lost off Barry Point on May 15, 1923 (Kohl 1997). The vessel was owned and crewed by Captain W. Savage and Mate P. McManus, both of Picton, Ontario. The balance of her crew consisted of Philip Haskell, Richard Woodward and a Mrs. Tierney. The William Jamieson left Oswego heading to Picton carrying a cargo of 250 tons of coal. The vessel was caught up in a storm south of Amherst Island and made her way through the Upper Gap in an effort to find safe harbor. However, the storm had weakened the seams of the vessel allowing water to fill her hold (Kohl 1997). The ingress of water was slow enough to allow the crew to beach the vessel on the north shore of Amherst Island, allowing enough time for the crew to jump ashore. Despite the efforts of the crew to secure the vessel on the beach, it slowly slid back into the deeper water offshore.

The wreck was discovered in 1963 by recreational scuba divers from the Aqua Fins Scuba Club in Kingston, Ontario. As there was no standing legislation at the time to protect the wreck, the divers collected numerous artifacts including the ships bell, compass and numerous examples of crockery (Kohl 1997). These artifacts are now said to be in the possession of the descendants of the crew of the ship (Kohl 1997).

While the William Jamieson (BeGe-4) is the only registered archaeological site near the Project Study Area, there are numerous other known and unregistered archaeological sites around the Project Area.

These are sites which have been found by recreational scuba divers or academic research and have not been entered into the ASDB. The Project Study Area is located to the west of Parrots Bay. This area was subject to an underwater and terrestrial survey in regards to maritime history. The work was conducted by Dr. Benjamin Ford as part of his dissertation research, and resulted in the recording of various archaeological sites both located during the field work and recorded from local informant interviews. Table 2 outlines additional marine archaeological sites which are known to exist in the region surrounding the study area. Archaeological sites which were recorded by Dr. Ford from informant interviews have been omitted. In conversation with Dr. Ford for the purpose of this assessment he noted that he had been told by recreational divers of numerous quantities timber sticks within the channel (the Project Study Area). Although anecdotal, the presence of timber sticks (which were used for driving timber) would be likely due to the history of logging in the area.

Table 2. Non-Registered Archaeological Sites near the Project Study Area

Source	Name	Site Notes	Cultural Affiliation
MTCS 2011b	Colonel Cook	Wreck, ship	Euro-Canadian
MTCS 2011b	Glendora	Wreck, ship	Euro-Canadian
MTCS 2011b	Jura	Wreck, ship	Euro-Canadian
MTCS 2011b	Norman	Wreck, ship	Euro-Canadian
MTCS 2011b	Unknown	Wreck, ship	Euro-Canadian
MTCS 2011b	Ricky's Tug Wreck	Wreck, ship	Euro-Canadian
MTCS 2011b	Simla	Wreck, ship	Euro-Canadian
MTCS 2011b	Varuna	Wreck, ship	Euro-Canadian
Ford 2009	Rowboat	Wreck, ship	Euro-Canadian
Ford 2009	Dock Fragments 1	Recreational	Euro-Canadian
Ford 2009	Dock Fragments 2	Recreational	Euro-Canadian
Ford 2009	Anchor	Shipping Related	Euro-Canadian

The schooner Two Brothers, which was sunk by American forces near Bath Ontario in 1811, has never been officially located. It is possible this wreck is located within the Project Study Area but situated outside of project component locations.

2.5 RECREATIONAL DIVING AREA WITHIN THE PROJECT STUDY AREA

Unlike terrestrial archaeological assessments, underwater archaeological assessments pose unique and challenging circumstances. Generally, the public at large is unaware of terrestrial based archaeological sites and archaeological materials may seem entirely natural to the untrained eye. Unfortunately, for submerged cultural heritage features, such as shipwrecks or other large features, the recreational diver is well aware of their location. As evidenced by the removal of artifacts from the William B. Jamieson in the 1960s, the diving community as a whole believed there was nothing wrong with the removal of artifacts. The modern scuba diving community generally has adopted the mantra of “take only pictures, leave only bubbles”. Diver-based heritage groups have been developed to not only protect and promote but to help document the archaeological history found on the bottom of Lake Ontario through the creation of public heritage databases (Save Ontario Shipwrecks 2011).

In order to better understand the actual nature of the Project Study Area, scuba diving tour operators and dive shops were phoned throughout December of 2011. Since these groups often have a large membership and dive throughout the area it was determined that they offered the best source for further information into potential resources within the area. The groups contacted were simply asked if anyone present has dived within the area around Amherst Island and if anyone had specifically dove between the town of Millhaven and Amherst Island. The nature of the Project or location was not disclosed to any of those interviewed. In total 27 divers were interviewed of which 14 had stated they had dived within the area in question. The majority had stated they did not dive in the area due to the ferry traffic and the strong current present in the middle of the Project Study Area. When asked what they had seen on their dives all cultural material references were noted (Table 3).

Table 3. Cultural Materials Noted During Recreation Diving within the Project Study Area

Cultural Materials	# of Divers	% of Divers Interviewed
Shipwreck - William B Jamieson	11	78%
“Garbage”	3	21%
“Logs” (Presumably Cut Timber)	2	14%
“Cables” (20th century)	1	7%
“Wreckage” (indeterminate)	1	7%
“Chains”	8	57%
“Bottles” (indeterminate age)	6	43%

While this informal discussion with these recreational divers does not provide full insight into the area, it does help to better understand the potential findings. Table 3 outlines the cultural materials respondents reported seeing and the percentage of overall respondents who reported said materials. The vast majority of divers within the Project Area (78%) are drawn towards the dive site of the William B. Jamieson. The declaration of garbage, cables, wreckage, chains and bottles coincide with the area being a heavily crossed area for the past 200 years.

3.0 Desktop Review Conclusions

Based upon the nature of the Project Study Area, the presence of known archaeological sites and the history of the region, the Project Study Area has potential for the discovery of marine archaeological resources.

4.0 Desktop Review Recommendations

Based on the evaluation of the Project Study Area and the potential for the presence of archaeological resources, it was recommended that a marine archaeological survey be undertaken with the following recommendations:

- Sonar Survey: The proposed route for the submarine cable and potential dock facilities should be subject to a multi-beam sonar survey to determine if any submerged wrecks of other identifiable cultural resources are present.

- Remotely Operated Vehicle (ROV) Spot-checks: Potential anthropogenic targets should be subject to spot-checks by an ROV to determine the nature of the target. Due to water conditions and active ferry crossing, scuba diving is not recommended.

- It is recommended that any identified cultural remains found in the survey be avoided. In the event that submerged resources are found, the Ministry of Tourism, Culture and Sport will be contacted in order to determine an adequate buffer area around any such resources.

It should be noted that changes to the Project design be considered to avoid any identified archaeological deposits.

5.0 Field Methods - Underwater Archaeological Survey

In response to the Desktop Review Recommendations (Section 5.0) an underwater remote sensing survey was conducted from May 1 to May 31, 2012. ASI Marine Inc. (ASI) was retained by Windlectric Inc. to conduct the technical portions of the marine geophysical survey. Survey was conducted aboard an ASI survey vessel (the Inspector). A multi-beam sonar survey was conducted to identify anthropogenic targets within the Project Area. The sonar survey was conducted at various times during the project period as weather allowed. It should be noted that while survey was conducted there where small portions of the multi-beam survey which, while conducted, had no data retained (Supplementary Documentation – Attachment A – Section 4). The Project Archaeologist was on board the vessel and monitoring data to ensure that these areas had no identifiable targets. The sonar survey resulted in the discovery of six anthropogenic targets within the Project Study Area.

The potential anthropogenic targets identified during the multi-beam sonar survey were investigated through the use of a LBV300XL ROV Sonar unit. ROV inspection of targets was conducted between May 22 and May 25, 2012. The ROV was operated by ASI personnel while video feeds were monitored by a licensed marine archaeologist. ROV inspection of the anthropogenic targets was non-contact and non-disturbance in nature. While the ROV was fitted with a manipulator arm, no sampling or direct contact was conducted with the identified targets.

An additional sub-bottom profile survey was conducted using a Chirp system. This was used to determine if potentially buried archaeological resources existed in the Project Study Area. No anthropogenic targets outside of 20th century intake pipes from existing facilities in Millhaven were noted during the sub-bottom profiler survey.

6.0 Record of Finds

The underwater archaeological survey was conducted employing the methods described in Section 5.0. An inventory of the documentary record generated by field work is provided in Table 4 below and the survey results are discussed here.

Table 4: Inventory of Documentary Record

Document Type	Current Location of Document Type	Additional Comments
Field Notes	Stantec office in Burlington	In original field book and photocopied in project file
Maps Provided by Client	Stantec office in Burlington	Hard and digital copies in project file
Digital Photographs	Stantec office in Burlington	Store digitally in project file

6.1 PROJECT STUDY AREA

The anthropogenic targets located in the Project Study Area are as follows:

6.1.1 Target AT1

This target was detected in the southern portion of the Project Area at a depth of 3 metres. It is composed of two parallel members 1.5 metres apart and is raised from the lake bottom at height of approximately 0.5 metres. The target was identified as a 20th century vehicle chassis, likely a piece of farm equipment.

Further information and images on this target can be found in the Supplementary Documentation – Attachment A – Appendix 6).

6.1.2 Target AT2

This target was detected in the northern portion of the Project Area at a depth of 40 metres. It is a small shipwreck approximately 2.5 metres in length, 1.5 metres in width and is situated approximately 0.5 metres above the lake bed (ASI 2012).

The target has been identified as a skiff from the 19th or 20th century. The vessel appears intact; however it is covered with extensive mussel growth. Due to extensive mussel growth it is not possible to speculate as to the construction method of the vessel. The wreck has filled with fine sediment and no examples of artifacts were noted within or around the vessel.

Further information and images on this target can be found in the Supplementary Documentation – Attachment A – Appendix 6.

6.1.3 Target AT3

This target was detected in the northern portion of the Project Area running perpendicular from the northern shore for approximately 600 metres (ASI 2012). It is composed of two linear structures each approximately one metre in diameter (ASI 2012). This target has been identified as a 20th century intake pipe.

Further information on this target can be found in the Supplementary Documentation – Attachment A – Appendix 6.

6.1.4 Target AT4

This target was detected through the visual survey of the northern portion of the Project Study Area at a depth of 1.5 metres. The target consists of numerous log timbers. Several of the timbers are attached to one another, it likely this target represents a former dock or crib.

Further information on this target can be found in the Supplementary Documentation – Attachment A – Appendix 6.

6.1.5 Targets AT5 and AT6

These two targets were identified as the existing Ministry of Transportation (MTO) bubbler line (see Section 6.2) running through the Project Study Area. This pipeline was installed in the late 20th century to facilitate ferry crossings during the winter months. These targets were detected on the multi-beam sonar as bright reflectors (ASI 2012).

Further information on these targets can be found in the Supplementary Documentation – Attachment A – Appendix 6.

6.2 SECONDARY BUBBLER LINE SURVEY AREA

A secondary survey was conducted outside of the proposed submarine cable route at the request of the project proponent. The purpose of this secondary survey was to locate an existing MTO bubbler line which runs along the existing Loyalist Township public ferry route (Supplementary Documentation Figure 2). The survey of this area resulted in the discovery of a 19th to 20th century shipwreck (located approximately 350 metres west of the Project's proposed submarine cable route). The vessel was found during a multi-beam sonar survey and measures 50 feet (or 15.5 metres) in length by 13 feet (or 4 metres) in width. The vessel is approximately 6.6 feet (or 2 metres) tall at the stern and 5 feet (or 1.5 metres) at the bow. The bow is pointed at a heading of 108 degrees, approximately southeast. The vessel is situated 11.5 metres

northeast of the existing MTO bubbler line and 350 metres from the proposed submarine cable route.

The vessel was investigated on May 24th, 2012 via ROV survey. The wreck appears to be a 19th to 20th century sailing vessel and covered in mussel growth, common with underwater material in the Great Lakes. The vessel appears to be in a fragile state due to decomposition of structure, either from a wrecking event; natural and cultural site formation processes; or a combination of these. The absence of a mast or other associated wreckage material surrounding the vessel could suggest that the ship either broke up prior to settling in its current location or deteriorated due to the surrounding natural environment. A wooden rudder assemblage was identified, indicating the vessel is a possible sailing ship. The vessel exhibited signs of charring, inferring that the ship may have been burned prior to sinking; however further research is required to confirm these findings. Based on ROV survey no positive identification of the wreck could be determined, additional information gathered may prove valuable in ascertaining its identification.

This wreck has been registered with the Ontario Ministry of Tourism, Culture and Sport as the North Amherst Wreck (BbGe-27).

7.0 Analysis and Conclusions

An underwater archaeological survey was conducted within the project study area, identifying six anthropogenic targets, and along the MTO bubbler line, identifying one additional target. Recommendations for these targets are as follows:

7.1 PROJECT STUDY AREA

7.1.1 Target AT1

Target AT1 does not represent a target of archaeological concern and as such was not registered with the Ontario Ministry of Tourism, Culture and Sport.

7.1.2 Target AT2

Target AT2 represents a target of archaeological concern and has been registered with the Ontario Ministry of Tourism, Culture and Sport as the Skiff Wreck Site (BbGe-28).

7.1.3 Target AT3

Target AT3 does not represent a target of archaeological concern and as such has not been registered with the Ontario Ministry of Tourism, Culture and Sport.

7.1.4 Target AT4

Target AT4 does represent a target of archaeological interest. However it has not been registered with the Ontario Ministry of Tourism, Culture and Sport.

7.1.5 Targets AT5 and AT6

Targets AT5 and AT6 do not represent a target of archaeological concern and as such have not been registered with the Ontario Ministry of Tourism, Culture and Sport.

7.2 SECONDARY BUBBLER LINE SURVEY AREA

The wreck documented during the MTO bubbler line survey represents a target of archaeological concern and has been registered with the Ontario Ministry of Tourism, Culture and Sport as the North Amherst Wreck (BbGe-27).

8.0 Recommendations

8.1 PROJECT STUDY AREA

The identified targets of archaeological concern within the Project Study Area, AT2 and AT4, are outside the proposed submarine cable route or the proposed docking facility option locations. The following recommendations are made for each target:

AT2 – The Skiff Wreck Site, BbGe-28: The proposed docking facility and submarine cable will not impact this location. However it is recommended that this site be avoided with a minimum buffer of 100 metres surrounding the wreck.

AT4 – Unidentified Timber Feature: It is recommended that this feature be avoided with a minimum buffer of 40 metres surrounding the feature.

Targets AT1, AT3, AT5 and AT6 are considered sufficiently documented and no further archaeological assessment is recommended. No archaeological buffer is recommended for any of these targets.

8.2 NORTH AMHERST WRECK

The shipwreck located during the MTO bubbler line survey is likely from the 19th or 20th century. While this site is situated outside of the submarine cable route it is recommended that the site be avoided with a 100 metre buffer. This has been verified as an acceptable buffer from the Ontario Ministry of Tourism, Culture and Sport.

9.0 Advice on Compliance With Legislation

It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest , and the report has been filed in the Ontario Public Register of Archaeology Reports referred to in Section 65.1 of the *Ontario Heritage Act*.

Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the *Ontario Heritage Act*. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed consultant archaeologist to carry out archaeological fieldwork, in compliance with Section 48 (1) of the *Ontario Heritage Act*.

The *Cemeteries Act*, R.S.O. 1990 c. C.4 and the *Funeral, Burial and Cremation Services Act*, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.

10.0 Closure

This report has been prepared for the sole benefit of Windlectric Inc. and may not be used without the express written consent of Stantec Consulting Ltd and Windlectric Inc. Any use which a third party makes of this report is the responsibility of such third party.

This report is filed with the Minister of Tourism, Culture and Sport in compliance with sec. 65 (1) of the *Ontario Heritage Act*. The Ministry reviews reports to ensure that the licensee has met the terms and conditions of the licence and archaeological resources have been identified and documented according to the standards and guidelines set by the Ministry of Tourism, Culture and Sport, ensuring the conservation, protection and preservation of the heritage of Ontario. It is recommended that development not proceed before receiving confirmation that the Ministry of Tourism, Culture and Sport has entered the report into the provincial register of reports.

We trust this report meets your current requirements. Please do not hesitate to contact us should you require further information or have additional questions about any facet of this project.

Yours truly,

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11.0 Bibliography and Sources

11.1 LITERATURE CITED

Archaeological Services Inc, 1990. *A Guide to Prehistoric Archaeological Resources: Approaches to Site Potential Modeling for Environmental Assessment*. Report on file, Land Use Environmental Assessment Act, R.S.O. 1990, c. E.18 (last amended 2010).

Flint, Charles. 1884. *Progress in Agriculture*. Ottawa: Department of Agriculture.

Ford, Benjamin Louis, 2009. *Lake Ontario Maritime Cultural Landscape*. Doctoral thesis on file, Texas A&M University.

Kingston Historical Society, 1952. *Historic Kingston*. Kingston: Kingston Historical Society.

Kohl, Cris. 1997. *Treacherous Waters: Kingston's Shipwrecks*. Chatham: C. Kohl.

Malcomson, Robert. 2001a. "'Not Very Much Celebrated:' The Evolution and Nature of the Provincial Marine, 1755-1813". *The Northern Mariner* XI (1): 25-37.

Malcomson, Robert, 2001b. *Warships of the Great Lakes 1754-1834*. London: Chatham Publishing Group.

Nautical Archaeology Society. 2009. *Second Edition: Underwater Archaeology The NAS Guide to Principles and Practice*. London: Blackwell Publishing.

Ontario Ministry of Tourism, Culture and Sport (MTCS). 2011a. *Standards and Guidelines for Consultant Archaeologists*. Toronto: Ministry of Tourism, Culture and Sport.

Ontario Ministry of Tourism, Culture and Sport (MTCS). 2011b. Archaeological Sites Database. Records on file at the Culture Services Unit, Toronto.

Save Ontario Shipwrecks (SOS). 2011. *Marine Heritage Database*. Electronic document: http://www.saveontarioshipwrecks.on.ca/database/vessel_search.asp. Last accessed on November 1, 2012.

Wright, J.V. 1995. *A History of the Native People of Canada, Volume 1 (10,000-1,000 B.C.)*. Canadian Museum of Civilization, Mercury Series, Archaeology Paper 152. Gatineau: Canadian Museum of Civilization.

11.2 LITERATURE CONSULTED

Feltner, Charles E. 1982. Great Lakes Maritime History: Bibliography and Sources of Information. Detroit: Seajay Publications.

Marx, Robert F. 1993. *Shipwrecks in the Americas: A complete guide to every major shipwreck in the Western Hemisphere*. New York: Bonanza Books.

Prince Edward County, 2011. “Shipwreck Diving” on the *Prince Edward County Official Tourism Website*. Electronic document: http://prince-edward-county.com/shipwreck-diving/. Last accessed on November 1, 2012.

Swayze, David.1992. *Shipwreck! A Comprehensive Directory of Over 3,700 Shipwrecks on the Great Lakes*. Boyne City: Harbor House Publishers Inc.