



FOREST OPERATIONS ON CROWN LAND

**A Draft Technical Bulletin for
Consultant Archaeologists in Ontario**

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Purpose

This technical bulletin is intended to aid consultant archaeologists in the use of the draft *Standards and Guidelines for Consultant Archaeologists (2009)* as they relate to assessments of archaeological potential and mitigation of impacts to archaeological sites in forest operations on Crown land.

Introduction

Forestry proponents are required to address a range of possible heritage impacts when conducting forestry operations. This includes ensuring that the *Ontario Heritage Act* is followed so that registered archaeological sites are protected and the disturbance of unidentified archaeological sites is minimized as a result of forest operations.

The management of archaeological resources arises from the *Ontario Heritage Act* and the licensing of archaeological fieldwork. The Ministry of Culture's draft *Standards and Guidelines for Consultant Archaeologists (2009)* defines the practices consultant archaeologists must follow when employed by a proponent to address archaeological conservation requirements. Archaeological assessments prior to forest operations are part of a distinct and unique process. This bulletin outlines a process that allows for avoidance and protection of areas of archaeological potential and known archaeological sites within forest management units on Crown land.

The Ministry of Culture's draft *Aboriginal Engagement Technical Bulletin* should also be used to clarify best practices.

Pre-Stage 1: Determination of areas to be assessed by the consultant archaeologist

During the forest management planning process, the Ministry of Natural Resources (MNR) provides the forest licence holder with a map showing areas of archaeological potential. The forest licence holder then determines what operations, if any, will occur in these areas, in consultation with the MNR. This process is discussed in the *Forest Management Guide for Cultural Heritage Values (2007)*.

There are three possible outcomes for areas of archaeological potential:

1. No harvest
2. Harvest with less than 5% mineral soil disturbance
3. Harvest with greater than 5% mineral soil disturbance, requiring archaeological assessment

The consultant archaeologist will NOT likely be involved in the consultation process, but will be asked to assess those areas that make up the third category. The result of the Pre-Stage 1 exercise will be a map showing areas where archaeological assessment will be necessary.

If areas of proposed ground disturbance and areas of archaeological potential do not overlap, then no archaeological assessment is required.

Stage 1: Background study

There is a special condition that applies specifically to forest operations on Crown land. The Stage 1 process is described in Section 1.4.3 of the draft *Standards and Guidelines for Consultant Archaeologists (2009)* and reproduced in the text box below.

There are a number of activities the consultant archaeologist might undertake to further refine the areas of confirmed potential before going to the site, for example: review aerial photographs, topographical maps or forest resource inventory maps, or view the areas from a helicopter. This Stage 1 research will result in a map for planned Stage 2 activities. For most forest operations assessments it will be practical and efficient to combine a Stage 1 site visit with Stage 2 fieldwork.

From the draft *Standards and Guidelines for Consultant Archaeologists* (2009):

Forest management plans

The following process applies to all forestry projects on Crown land where the Ministry of Natural Resources uses its screening process to define the areas that will require archaeological assessment within a forest management unit. The screening process includes the following steps:

Step 1

Mapping of archaeological potential, based on a model of potential that gives weight and value to specific landscape elements, including:

- Reviewing the locations of registered archaeological sites and other sites with cultural heritage value. Landform types that have stronger associations with such sites are assigned higher values.
- Confirmation by the Ministry of Natural Resources of this preliminary model of archaeological potential by reviewing additional information available internally and from the local community, aerial photography, and historical mapping.

Areas determined by this mapping to be lacking archaeological potential are at this point exempted from Stage 2 survey.

Step 2

The proponent and the Ministry of Natural Resources evaluate the activities planned for the forestry project for their potential to alter the ground to the point of having an impact on any potential archaeological sites in those areas determined to have potential. Where there are planned impacts, they review best practices for avoiding those alterations or reducing their impact (e.g., planning for water crossings, restricting activities to frozen ground conditions only).

Step 3

Stage 2 survey is only required where impacts to areas with archaeological potential cannot be avoided. Note that the *Special condition for Stage 2 test pitting in northern and eastern Ontario* (section 2.1.3) will usually apply to forestry projects.

Guidelines

1. In instances where it is suspected that an on-the-ground inspection may quickly determine that there is no archaeological potential despite the results of the potential mapping, it may be useful to conduct a Stage 1 property inspection. For most forest operations projects, however, it may be more practical and efficient to combine on-the-ground evaluations of archaeological potential with the Stage 2 fieldwork.

Stage 2: Property survey

The map produced at the end of the Stage 1 assessment will be further refined by the archaeologist upon viewing the property. While the standards and guidelines set out fieldwork requirements, there is a strong element of professional judgment on the part of the consultant archaeologist in implementing those requirements.

The consultant archaeologist will need to ground-truth the archaeological potential mapping produced at the end of the Stage 1 process. This may result in identification of further areas with no archaeological potential.

Section 2.1 of the draft *Standards and Guidelines for Consultant Archaeologists (2009)* sets out criteria that the consultant archaeologist can apply to determine areas that do not require Stage 2 survey. These determinations can only be made by the consultant archaeologist on the ground and based on their experience, professional judgment, and the geography of the area. Areas such as those that are permanently wet, steeply sloped, or bare rock are exempted from survey.

From the draft *Standards and Guidelines for Consultant Archaeologists (2009)*:

Standards

1. Survey the entire property, including lands immediately adjacent to built structures (both intact and ruins), with the exception of the following:
 - a. physical features of no or low archaeological potential, including but not limited to:
 - i. permanently wet areas
 - ii. exposed bedrock
 - iii. steep slopes (greater than 20°) except in locations likely to contain pictographs or petroglyphs
 - b. areas with extensive and deep land alteration that has severely damaged the integrity of archaeological resources
 - c. areas formally prohibited from alteration such as areas in an environmental easement, restrictive setback, or prohibitive zoning, where the constraint prohibits alterations. (Open space and other designations where allowable uses include land alterations must be surveyed.)
 - d. areas excluded from the development application because they are being transferred to a public land-holding body (e.g., municipality, conservation authority, provincial agency). Areas included in the development application for which a future transfer is planned are not exempt.
 - e. areas of forest management activity without potential for impacts to archaeological sites, as determined through the Stage 1 forest management plans process (see Stage 1, Section 1.4.3).

The predominant method of Stage 2 assessment will be test pit survey. The draft *Standards and Guidelines for Consultant Archaeologists (2009)* outline the acceptable test pitting strategies and methods. However, forest operations offer different conditions than many other types of projects. The consultant archaeologist may make use of two special conditions designed to address those differences:

- The **Special Condition for Test Pit Survey in Northern and Eastern Ontario** recognizes the differences between where sites are likely to be located within the Canadian Shield and where sites

are likely to be located in more southerly parts of Ontario. The area around a feature of potential that requires test pitting is reduced and the requirements for test pitting intervals are also reduced.

From draft *Standards and Guidelines for Consultant Archaeologists* (2009):

Test pit survey in northern and eastern Ontario

Guidelines

1. As an alternative to general test pit survey standards 1 and 2, a modified test pit survey interval may be used for northern and Canadian Shield terrain:
 - a. At 0 - 50 m from any feature of archaeological potential, space test pits at maximum intervals of 5 m.
 - b. At 50 - 150 m from any feature of archaeological potential, space test pits at maximum intervals of 10 m. Survey is not required beyond 150 m.
 - c. Clustered test pits may be used to survey small areas of archaeological potential located in areas otherwise determined to be of low archaeological potential.
2. While maintaining standard survey grids as closely as possible, the consultant archaeologist may vary from standard survey grids as necessary, based on professional judgment. Document and explain the rationale for all variations in the Stage 2 report.

- The **Special Condition for Areas with Complex Combinations of Archaeological Potential** recognizes that areas with a complex mixture of archaeological potential and low potential may sometimes be encountered during archaeological assessments. These conditions may often be encountered on the Canadian Shield. The areas of archaeological potential must still be surveyed where there will be impacts but this special condition allows for greater flexibility on the part of the consultant archaeologist in determining where to survey and places lesser demands on the degree of detail that is required to record the survey of such areas.

From the draft *Standards and Guidelines for Consultant Archaeologists* (2009):

Test pit survey in areas with complex combinations of archaeological potential

In the course of surveying areas previously identified as having archaeological potential, the consultant archaeologist may determine that an area consists of a complex combination of land conditions such that there are small areas of archaeological potential intermixed with areas of low potential. Examples include small pockets of soil scattered throughout a broader bare limestone plain, or dry areas scattered throughout broader wetlands. These small areas of archaeological potential must be surveyed, but it may not be possible to maintain a regular test pit grid or provide precise mapping of all the surveyed areas.

Standards

1. Survey all parts of these areas that are determined to have archaeological potential.
2. Record surveyed areas and areas of low potential not surveyed to the greatest degree of precision possible given the available base mapping.

Guidelines

1. While maintaining standard survey grids as closely as possible, the consultant archaeologist may vary from standard survey grids as necessary, based on professional judgment. Document and explain the rationale for all variations in the Stage 2 report.

2. Based on professional judgment, the consultant archaeologist may map an area containing complex combinations of conditions as one unit. Where this option is chosen, record the characteristics of the area through photographs and detailed written field notes (e.g., percentages of different physical features and areas of potential, percentages surveyed and not surveyed, degree of variation within the area).

There is also a special condition that applies to undisturbed forest floors with shallow soils. This special condition is an alternative to test pitting and applies only to areas where soil horizons are shallow. This special condition is generally not expected to apply to forest harvest operations.

The general and special condition standards for Stage 2 are intended to provide minimum requirements to which the consultant archaeologist must work, but may not address every situation. It may be necessary in some instances to discuss unusual conditions and alternative strategies with Ministry of Culture staff. Alternative strategies are acceptable where they do not conflict with the standards and with the general goal of the conservation of archaeological sites.

Where an archaeological site is discovered by test pitting, certain minimum activities must be carried out in Stage 2 in order to determine whether that archaeological site has cultural heritage value or interest, based on criteria set out in the standards and guidelines and based on the consultant archaeologist's professional judgment. This involves a small amount of further test pitting and/or excavation of test units, described in the draft *Standards and Guidelines for Consultant Archaeologists (2009)*.

The Stage 2 activities will determine what protection, if any, is necessary for the identified cultural heritage resources.

Protection of archaeological sites

For most forestry assessments, a Stage 3 assessment is not carried out after an archaeological site is identified. Instead, the Stage 2 report will identify any archaeological materials discovered and recommend a strategy to avoid impacts during forest operations.

Options for managing archaeological sites located during Stage 2 include:

- A buffer zone with a radius of **at least** 100 m from the estimated center of the site
- A Stage 3 archaeological assessment may find that the site is not of significance and does not need a buffer zone or any additional work or protection
- Stage 4 excavation removing the site
- Partial Stage 4 excavation and partial avoidance

If the impacts to an archaeological site are not mitigated through complete excavation of that site, the use of the buffer zone will ensure the protection of the archaeological site during forest operations.

Reporting

The consultant archaeologist must submit a report to the Ministry of Culture that documents their archaeological fieldwork. This report will be reviewed by the Ministry of Culture against the standards and guidelines. If all requirements have been met, and concerns for the conservation of archaeological sites have been addressed, the Ministry of Culture will issue a letter to the consultant archaeologist stating that the report has been accepted into the provincial register of reports and that the Ministry concurs with the recommendations that have been made regarding any further concerns for archaeological resources.

Concerns for cultural landscapes, Aboriginal values and cemeteries

The consultant archaeologist may be asked to provide services relating to these concerns. Where these services are being provided to the forestry licence holder, it should be noted that these concerns are not the activities for which consultant archaeologists are licensed under the *Ontario Heritage Act*. These concerns are covered off by other processes under other legislative mandates. The Ministry of Culture will not be reviewing for these concerns through the archaeological report review process. Please refer to the *Forest Management Guide for Cultural Heritage Values* or contact the Ministry of Natural Resources for guidance on addressing these concerns.

Glossary

Consultant archaeologist

An archaeologist who enters into an agreement with a client to carry out or supervise archaeological fieldwork on behalf of the client, produce reports for or on behalf of the client and provide technical advice to the client. A consultant archaeologist must hold a Professional licence issued by the Ministry of Culture. (O.Reg. 8/06).

Forest Operations

The harvesting of a forest resource, the use of a forest resource for a designated purpose, or the renewal or maintenance of a forest resource, including all related activities, such as road building (*Forest Management Planning Manual 2004*).

Ground disturbance

Anything greater than a 5% (on average) disturbance of the mineral soil layer beneath the organic soil layer, equivalent to “mineral soil disturbance” in the *Forest Management Guide for Cultural Heritage Values 2007*.