



End of Field Season Report
Testing the F₁ Archaeological Predictive Model

By

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ABSTRACT

A first generation of the archaeological predictive model was developed for the Manitoba Model Forest in 1999-2000. This was tested during the summer of 2000 near Bissett, Manitoba on sections of the Wanipigow River, Rice, Red Rice, Horseshoe and Round lakes. Field survey resulted in 21 newly recorded archaeological sites, most of which were identified as lithic reduction areas. The field component revealed that the predictive model required some modification to accommodate the interrelated and systemic nature that the proxy variables have on archaeological site location. Modification to the model was also necessary to facilitate not only identifying Low to High Potential areas but also to be able to predict archaeological site type.

A second important outcome of the field component was the heightened awareness of First Nation culture history by the Hollow Water community in general and the high school students who participated in the field survey in particular. This awareness was best exemplified during Hollow Water Culture Days on Black Island in August 2000 when students were able to demonstrate the archaeological survey techniques they had learned and explain the rationale to their community members.

Acknowledgements

This project would not have been possible without the financial and logistical support of a number of individuals and agencies. We would like to gratefully acknowledge the Manitoba Model Forest, Manitoba Heritage Grants Council and Manitoba Hydro for funding this phase of model development. We acknowledge the members of the steering committee: Jennifer Lidgett, Pine Falls Paper Company; Peter Sigurdson, Louisiana- Pacific; Chris Smith, Tolko; Mike Waldram, Manitoba Model Forest and Pat Badertscher, Historic Resources Branch for their valuable suggestions and guidance of this research. The Department of Anthropology, University of Manitoba, provided a small lab and computer facilities to the project.

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1.0 Introduction

In 1999, an archaeological predictive model was developed to identify the potential locations of unknown sites (Petch *et al.* 2000). In the summer of 2000, archaeological field survey was undertaken in the Bissett area of the Manitoba Model Forest (MbMF) under Manitoba Heritage Permit A27-00 (Appendix 1) to test the F₁ archaeological predictive model¹. The area selected for survey included a section of the Wanipigow River and Rice, Red Rice, Round and Horseshoe lakes (Figure 1). This area was chosen because of the cultural diversity of the archaeological record for nearby Wanipigow Lake as well as ethnographic information collected for areas north of the study region. The proximity to Wanipigow Lake and the similarity in distribution of physical variables made this area a good candidate for testing.

The approach used in field-testing the model was Participatory Action Research (PAR) that has, as part of its mandate, an active training component. The purpose of PAR is to involve members of the Aboriginal community in scientific research problems so those community researchers gain access to new skills. This approach is seen as one that can easily accommodate scientific and traditional knowledge.

The project proposal for conducting research within the traditional lands of Hollow Water First Nation was taken to Chief and Council. Once the project location was approved, the research team held several meetings at Wanipigow School to inform Grade 10 to 12 students and their teachers about the project and the nine available archaeological field assistant positions.

¹ F₁ model (filial) means that this is the first model to be developed for the project.

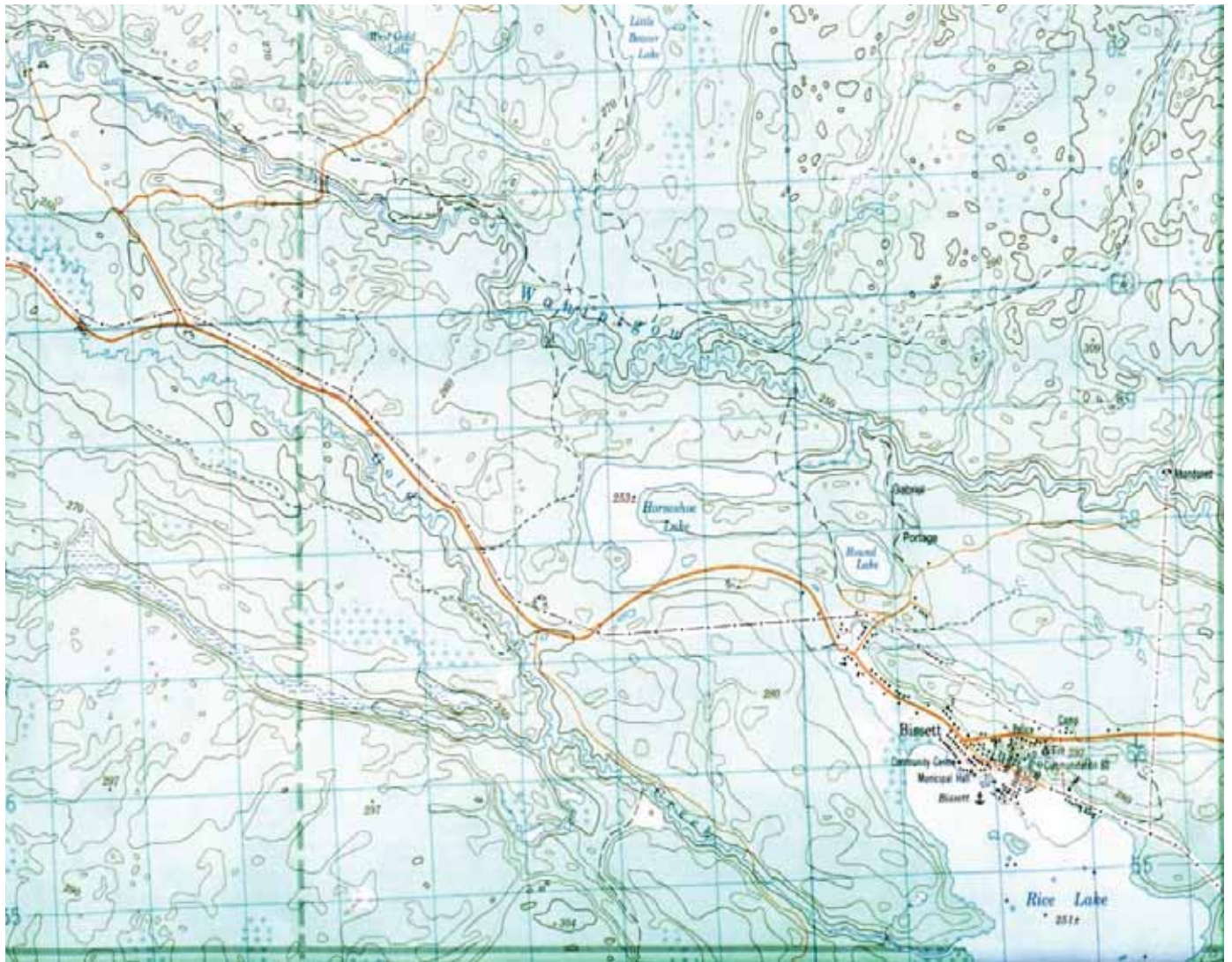
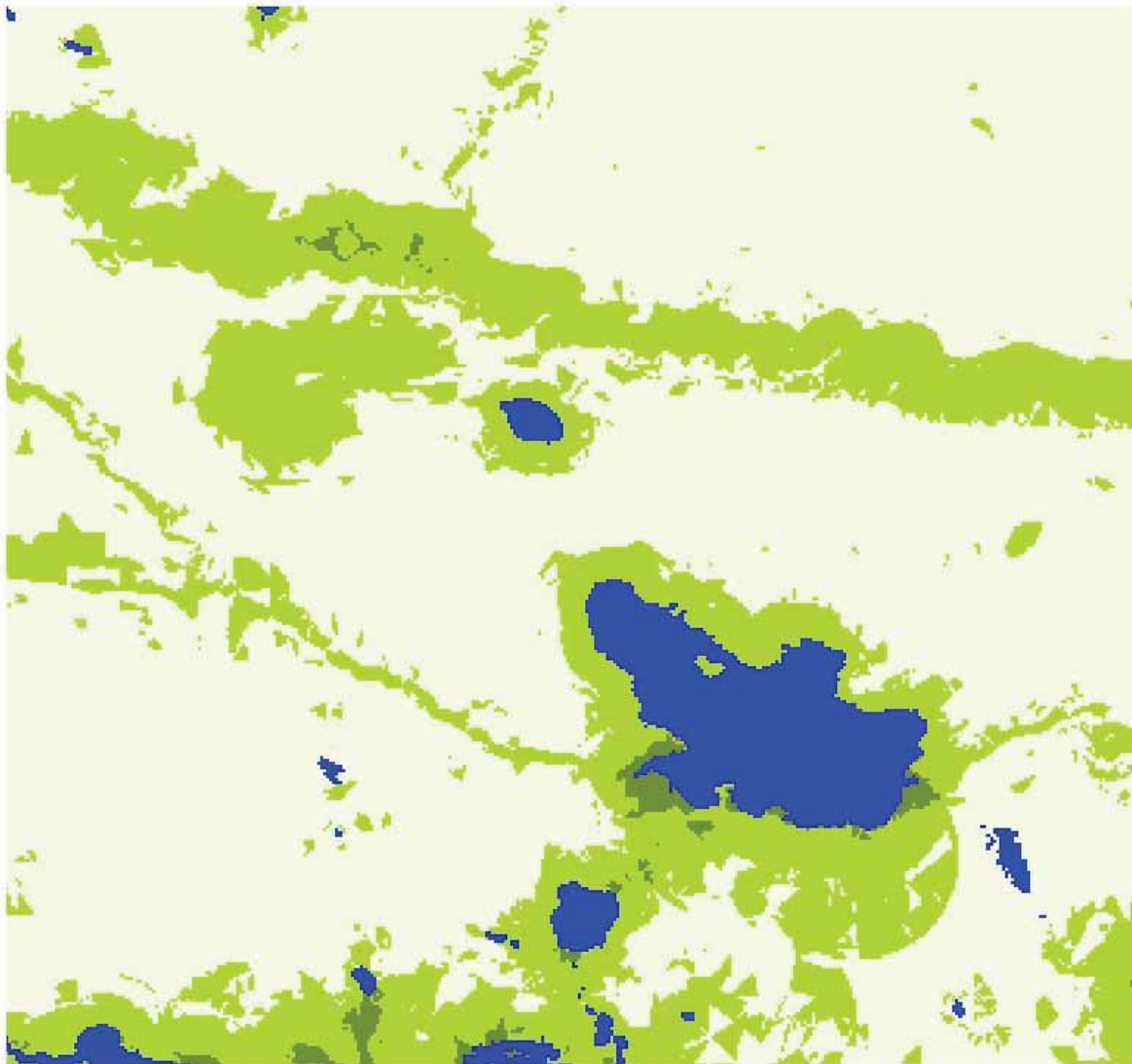


Figure 1. Manitoba Model Forest 2000 Survey Study Area.

2.0 Project Background

The concept of a Predictive Model for Potential Archaeological Site Location within the MbMF was first conceived by the Association of Manitoba Archaeologists in 1996 and was presented at a predictive modeling symposium sponsored by the MbMF in 1997. Predictive modeling was demonstrated as being a valuable cultural resource management tool. During the winter of 1999-2000, Dr. Virginia Petch, Ms. Linda Larcombe, Mr. David Ebert and Mr. Gene Senior developed the F₁ archaeological predictive model for the MbMF. This model was seen as an important contribution to archaeological predictive modeling because it used both biophysical and cultural data as proxy variables for predicting archaeological site locations.

Archaeological site locations are related to environmental features and cultural behaviors and, therefore, are not uniformly distributed across the landscape. Using a Geographic Information System (GIS) in *ArcView*, the F₁ archaeological predictive model mapped areas of Low to High potential for the locations of archaeological sites. Virtually all shorelines contained a Medium potential for heritage resources (Figure 2). Areas of High potential on Rice Lake and Wanipigow River were primarily associated with creek inlets. This littoral bias was a result of several factors: 1) past archaeological survey was typically restricted to the shorelines; 2) cottage development on the lakes resulted in the discovery of sites; and 3) water bodies were important landscape features for past people. The F₁ model shows however, that shorelines do not have the same uniform potential. Landscape features such as river and creek inlets, points of land, and protected coves also have a high potential for site location.



Revised Combo Model
Low Potential (11-39)
Medium Potential (40-68)
High Potential (69-97)
No Data

Study Area Cultural- Environmental Model



Figure 2. Model Forest Study Area showing areas of heritage potential. (Map by D. Ebert).

2.1 Archaeological Survey by Aboriginal People (A.S.A.P. 2000)

Several planning meetings were held with the Hollow Water Band Council to solicit their support for the project and to identify ways in which the community could participate in the predictive modeling research project. Petch (1997 and 1999) used a blend of community-based and participatory action research methodologies in the North Seal River and Poplar River archaeological projects. Four First Nation students from Tadoule Lake and three First Nation students from Poplar River were trained and employed as archaeological field crew within their communities' traditional lands. The success of these projects was used as an example of what could be accomplished with local high school students.

A decision was reached by the band council allowing selected high school students from Wanipigow School to receive training and employment in the predictive modeling research project. One of the intentions of the PAR approach is to provide high school students with opportunities to stimulate and direct career decisions. This approach also provides students the opportunity to explore and become aware of their cultural heritage.

The research team made two presentations to the students at Wanipigow School where the goals of archaeology, basic archaeological techniques and objectives of the proposed research project were described. A formal application and interview process was conducted to provide an opportunity for all students to apply for the positions. Twenty-three students applied for the nine available positions. The selected crew included Edward Bruneau, Christopher Bushie, Edward Bushie, Lavina Moneyas, Cassidy Raven, Anita Sinclair, Marshall Smith, Shannon Wood, and Ryan Young. The field supervisors, all graduate students from the University of Manitoba, were David Ebert (Ph.D. candidate), Gene Senior (M.A. student) and Matthew Singer (M.A. student).

Training sessions were held at Wanipigow School. Prior to fieldwork, the archaeological crew received one week of orientation and training in basic archaeological field techniques including:

- Archaeological field techniques;
- Map reading and map making;
- GPS (Global Position Satellite) coordinates;
- Technical photography;
- Manitoba Prehistory;
- Artifact identification;
- Geology and botany;
- Artifact drawing;
- Artifact cataloguing;
- Data entry; and
- Report writing.

The crew were taught a number of archaeological techniques to participate fully in the field reconnaissance and data collection. The shorelines of several lakes were examined using regularly placed shovel tests along transects of various lengths. At a lithic reduction site (EgKw-2) a small excavation was conducted and the crew learned to establish a standard grid, excavate in 3 cm levels and record the provenience of recovered artifacts. At EgKw-19, a site on Wanipigow Lake, the students learned how to conduct controlled surface collection. Part of the archaeological experience was to participate in all aspects of the field camp. The crew was assigned a variety of daily duties that included setting up camp, preparing meals and other kitchen duties at Currie's Landing².

² A boat launch area on the Wanipigow River about 10 km east of Bissett was used for base camp. Tents were provided for accommodation and kitchen tents were used to provide shelter and escape from the mosquitoes and bugs. Each person provided his or her own sleeping bag, rain gear and appropriate clothing. Kit bags, archaeological equipment, food and mosquito nets were provided by the project.

A temporary wet laboratory was established at the Hollow Water Community Center once the field component was completed. Laboratory procedures were demonstrated and the students processed the artifacts that were collected during the field survey. Artifact processing or curation involved cleaning, identifying, and cataloguing each artifact. The data were then entered into a spreadsheet. Each crewmember was responsible for writing a brief report about the fieldwork and the archaeological sites that were found. Anita Sinclair and Edward Bushie interviewed each of the crewmembers about their archaeological experience. This was published in the Manitoba Archaeological Society Newsletter (Larcombe *et al.* 2000: 1-3). The evaluation of the work experience by the crew was generally positive.

The archaeological research team was invited to participate in the Black Island Cultural Days to demonstrate how an archaeological survey is conducted (Northern Lights Heritage Services Inc. 2000). A transect was established and a series of test pits established at 5 m intervals. These were located on the upper terrace of the main encampment. The demonstration was well received by those who watched the excavations take place and crewmembers were able to answer questions that were presented to them. An informal exploration of Drumming Point was a highlight for the archaeological crew.

As part of the holistic approach adapted by the research team, the crew participated in a three-day cultural workshop instructed by Messers. Garry and Raymond Raven. Students received instruction in Anishinabe teachings, which focussed on traditional cultural values and healing, as well as practical experiences.

The crew also developed a logo (see cover sheet) and a project name - Archaeological Survey by Aboriginal People (A.S.A.P.). The traditional wheel with the four directions was adopted for the logo. Northern Lights Heritage Services Inc. created a computer design of the logo which was then stamped on T-shirts for the crew. The title has been used for numerous presentations and reports.

On October 25 the crew met to construct a poster display for public presentations. Photographs taken during the fieldwork became part of the documentary evidence. The crew attended a Manitoba Model Forest Social Issues Committee meeting at Manigotagan where the posters were displayed and the crewmembers answered questions about their archaeological experience.

3.0 Review of Archaeological Models in the Model Forest Area

People hunted and gathered on the east side of Lake Winnipeg as early as 8000 years ago (Buchner 1984). Based on the tool styles and pottery found at sites such as Wanipigow Lake, Caribou (Quesnel) Lake, Sinnock Site, and further south along the Winnipeg River, a chronology of human habitation and resource use of the Model Forest area is discernable (Table 1). Extensively excavated sites such as the Wanipigow Lake Site (Saylor 1989), the Sinnock Site (Buchner 1984), the Quesnel (Caribou) Lake region (Buchner 1979), and the Bjorklund Site (Buchner 1982) provide evidence from which past human land use models can be derived to locate archaeological sites and study strategies for local resource extraction.

Petch *et al.* (2000) reviewed several resource use models that related to past human activities for inclusion in the F₁ predictive model. Hydrological patterns are landscape features that contribute significantly to a variety of Precontact human activities. In addition to the physiological need for water, waterways were used for travel both in summer and winter, for resource harvesting and spiritual activities. These are reflected in the current archaeological record. For example, a number of sites representing summer habitation of peoples are found on Wanipigow and Quesnel lakes. Large concentrations of pottery, stone tools and debitage as well as several hearths indicate seasonal, intensive use of particular campsites.

Table 1. Chronology of Human Occupation for the Manitoba Model Forest Area.

Archaeological Period	Pottery Type	Projectile Point Type
Terminal Woodland Woodland Period (Ca 2200-100 B.P.) Initial Woodland	Selkirk Blackduck Laurel	Side-notched Plains Triangular Eastern Triangular Selkirk Side-notched Avonlea Besant/Sonota Triangular
Archaic Period (ca 6500-3200 B.P.)		Larter Tanged Pelican Lake Duncan/Hanna McKean Old Copper Nutimik Oxbow Raddatz
Paleo-Indian Period (ca. 8000 B.P.)		Agate Basin Hell Gap Scottsbluff

The Thunderbird Nest Site (EgKx-15) contained archaeological materials that indicate hunting, gathering, habitation and spiritual activities were conducted by Late Woodland people (Carmichael 1979). The people who occupied the Thunderbird Nest

Site probably dispersed during the winter. This pattern of fusion/fission³ was typical of band societies and was probably a means of survival. The ethnohistoric record indicates that areas such as small inland lakes were ideal for winter camps because they afforded good shelter from prevailing winds and contained accessible firewood. The archaeological record of such sites is much subtler than summer campsites. Not only are winter campsites smaller, many of the visible features associated with human activities are obscured by heavy bush or have been destroyed by forest fire.

4.0 Methodology

Five areas in the MbMF were investigated: a 9.0 km section of the Wanipigow River; Round Lake; Horseshoe Lake; Rice Lake; and Red Rice Lake. The survey area is near Bissett, Manitoba, located 150 km north of Winnipeg on the Precambrian Shield within the boreal forest ecological zone. These areas were chosen for model testing because no previous archaeological survey had been conducted in these locales. Additionally, a portion of Wanipigow Lake was re-examined to provide the crew with examples of seasonal campsites and artifacts that could be expected in the study area and to assess the condition of the known sites for cultural resource management purposes. The crew was also invited to Black Island during the community's Black Island Cultural Days to demonstrate archaeological techniques and procedures.

Pedestrian surveys with arbitrary surface and subsurface testing along the shorelines and predetermined transects perpendicular to the shorelines were the main survey techniques. The number of transects completed at each lake and on the river was determined by a number of factors. Minimally, one transect in each of the cardinal directions was tested. At Rice Lake, additional transects were established to maximize the extent of the area tested, while transects were tested on both sides of the Wanipigow River. In addition, the escarpment that rose above the north shore of the Wanipigow River was subjected to extensive surface and subsurface testing.

³ Fission/fusion refers to the seasonal dispersal and union of band members usually the result of inadequate food resources during certain times of the year.

Every transect began at the water's edge and a test pit was excavated by each member of the four-person crew at 100-m intervals. The tests measured 25 cm X 25 cm and were excavated until either lacustrine clay or bedrock was exposed. Environmental data, slope and aspect at each test pit location were recorded on survey data forms. Positive or negative test result, soil type, latitude, longitude, and UTM coordinates were also reported. These data will be used to refine the predictive model. The survey methodology was modified after the first two weeks of fieldwork when no archaeological sites were found at a distance greater than 500 m from the water's edge.

5.0 Study Area Physiographic Profile

A narrow trench, a relic of glaciation, dominates the study area and drains the Wanipigow River system into Lake Winnipeg. The channel consists of a vertical rock face that rises approximately 30 m above the current lake level (Figure 3). This significant physiographic feature may have influenced past human resource use and movement across the landscape. Prior to 8400 years BP, Wanipigow Lake levels were significantly higher (4 to 5 m) although shoreline morphology was similar to the present (Teller and Last 1979). The rim of the trench serves as a natural boundary between the northern-most extent of the High Boreal Temperate Forest Region and the Low Boreal Forest Region (Woo *et al.* 1977).

The High Boreal Temperate Forest Region characterizes the study area (Figure 4). This region includes mixed patches of several species of soft and hardwood trees, underbrush of deciduous shrubs, grasses, herbs, flowers, lichen and mosses. The vegetation at any specific site within the study area is dependent upon the soil type, drainage, aspect, slope and successional stage of the forest. Both broadleaf deciduous hardwoods and conifers (softwoods) characterize the Low Boreal Forest Region. Within the study area there are at least one, but not more than three, of the four typical boreal



Figure 3. The Wanipigow River Trench. (Photo by G. Senior).

conifers: jack pine (*Pinus banksiana*), white spruce (*Picea glauca*), black spruce (*Picea mariana*) and tamarack (*Larix laricina*). The aspen (*Populus* sp.) is also frequently found. It is only within the northern boundary region, the classic boreal zone, that all four conifers thrive along with others such as balsam fir (*Populus balsamifera*) and some hardwoods.

The southern boreal margins are referred to as the “northern mixed woods” or simply the “mixed-woods”. Because of the drier, continental climate in the boreal zone of Manitoba, aspen, balsam poplar, birch (*Betula papyrifera*) and occasionally bur oak (*Quercus macrocarpa*) are more common in this region. The Low Boreal Ecoclimatic Region of the study area has two additional species of conifers, the white pine (*Pinus strobus*) and red pine (*Pinus resinosa*). The arboreal vegetation is interspersed occasionally by eutrophic swamps that are usually dominated by eastern white cedar (*Chamaecyparis thyoides*).

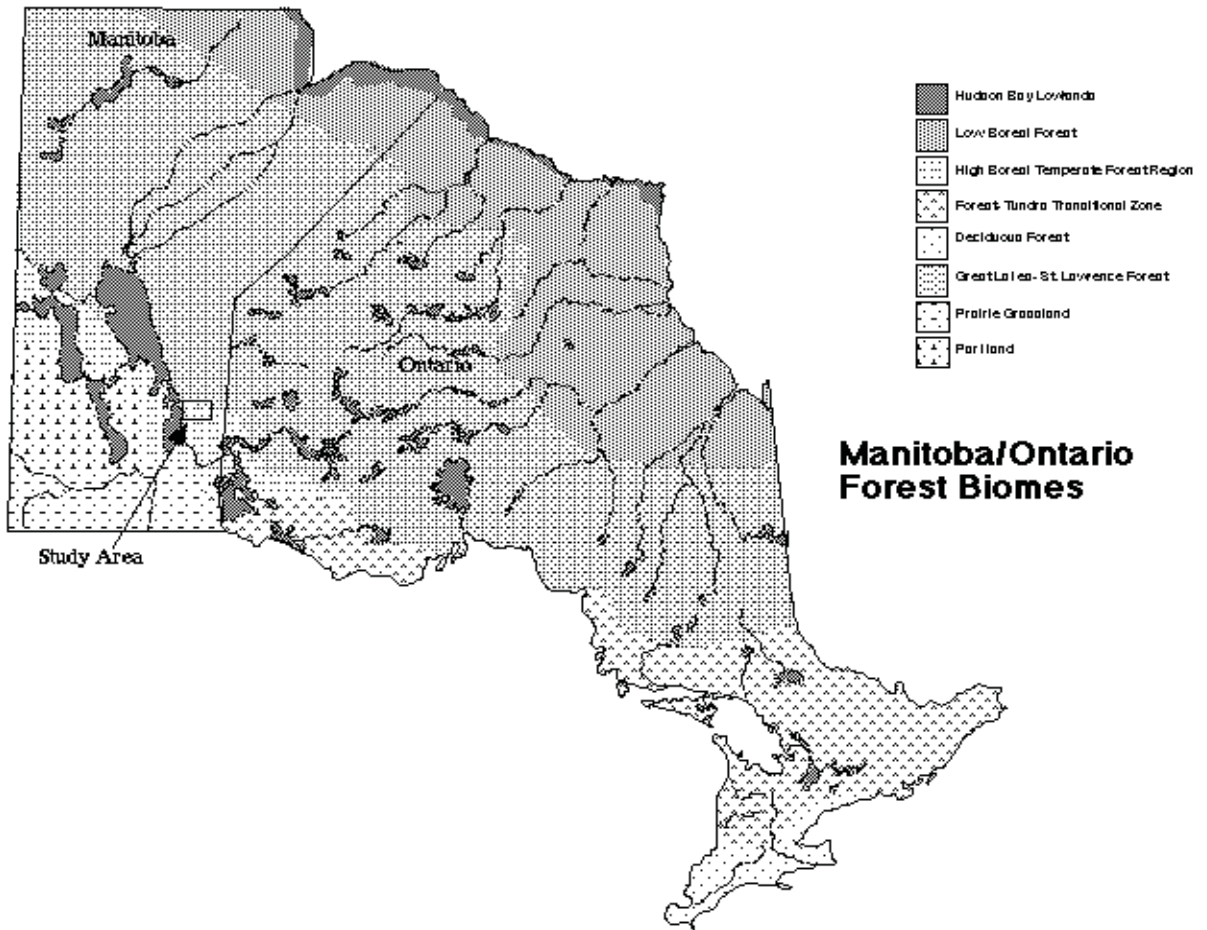


Figure 4. Manitoba – Ontario Forest Biomes (adapted from Rowe 1972).

The Shield region has many locales of poorly drained lowland bogs with black spruce-sphagnum communities and granitic rock outcrops with a thin organic layer of soil. Jack Pine, white and red pines dominate these thinly covered outcrops.

Soils of the study area are variable depending on type of terrain and proximity to lakeshore or riverbank. Areas along the shore of Wanipigow Lake primarily contain

Luvisol soils. Soils of the Luvisolic order generally “have light-coloured eluvial A horizons and they have illuvial B horizons in which silicate clay has accumulated” (Eilers *et al.* n.d. 34). Detailed soil analysis at the Wanipigow Lake site revealed that orthic gray luvisols in close proximity to the shoreline had developed in wave-modified clay textured sediments, while those inland or in higher-elevated areas in the general Wanipigow Lake region have developed in undisturbed lacustrine clay deposits (Zoltai 1989).

Soils belonging to the organic order are also common throughout the study area and, as the name suggests, are soils composed dominantly of organic materials and include peaty, muck or bog soils. Most Organic soils “are saturated with water for prolonged periods. They occur widely in poorly and very poorly drained depressions and level areas in regions of sub-humid to per-humid climate and derive from vegetation that grows in such sites” (Eilers *et al.* n.d.:34).

6.0 Survey Areas and Site Description

6.1 Wanipigow River

The Wanipigow River is flanked to the north by a bedrock escarpment that at some points is 30 m above the bank of the river (Figure 5). The A.S.A.P. crew discovered nine archaeological sites, primarily small workshops consisting predominantly of quartz flakes, along the Wanipigow River (Figure 6). Although the nature of the survey only allowed for a cursory examination of most sites found, one received a more detailed investigation. The JarJar Binks Site, EgKw-2, contained a large concentration of lithic flakes and provided an opportunity to instruct the crew in excavation techniques.

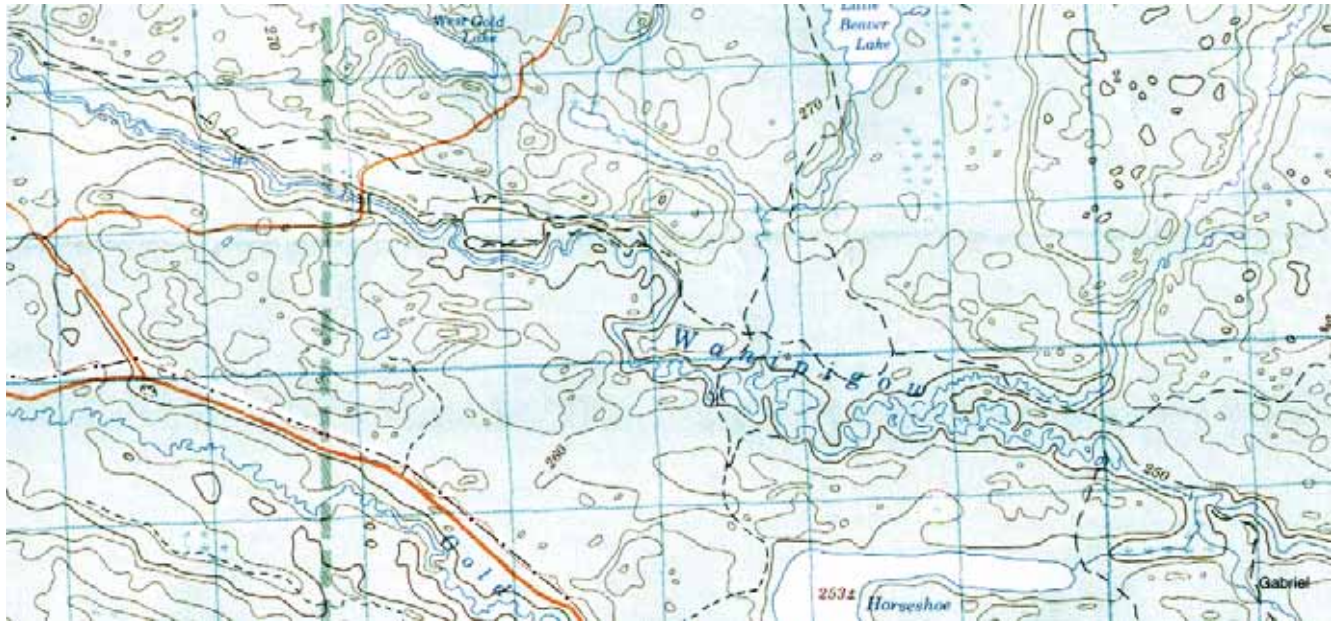
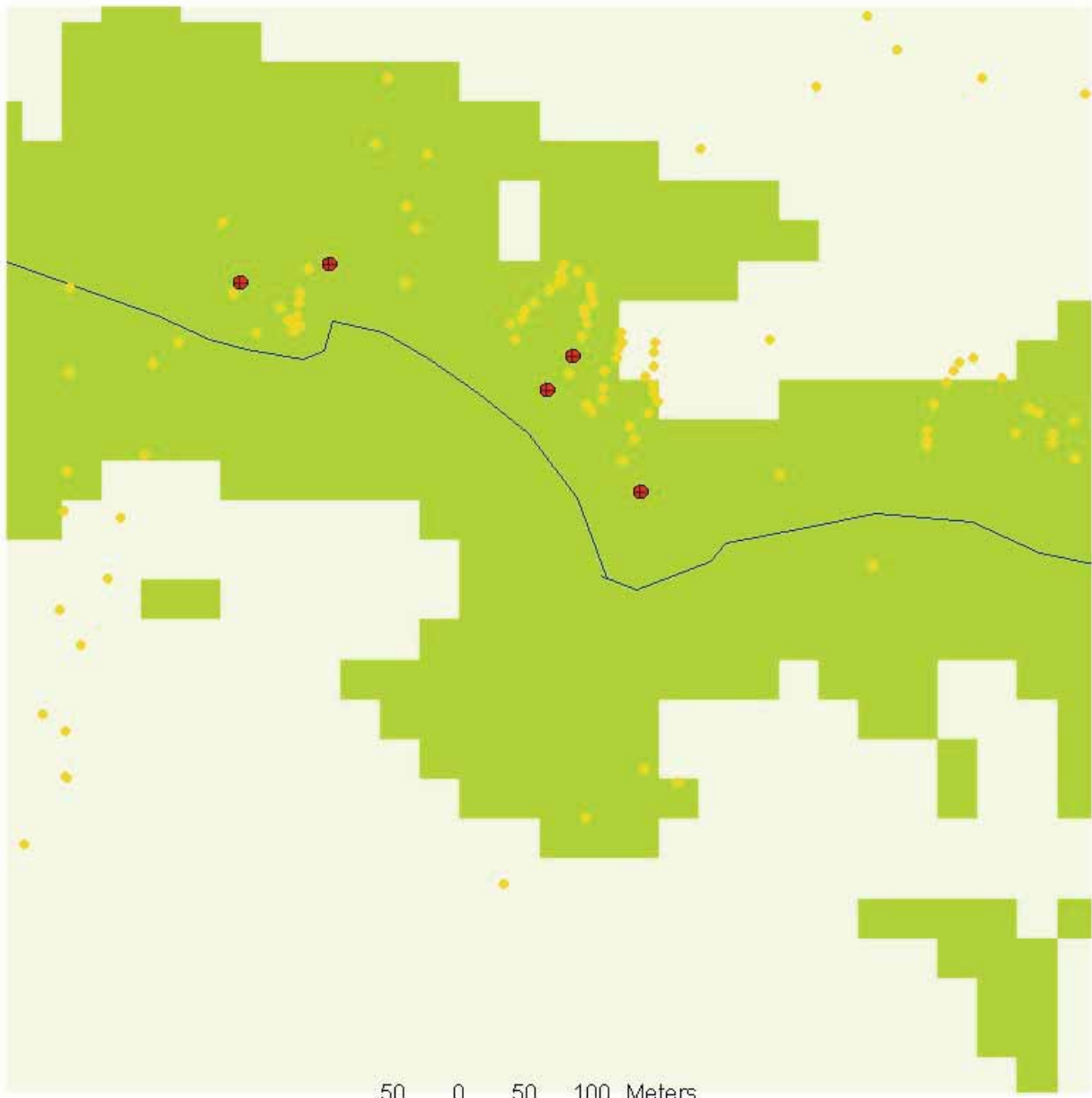


Figure 5. Wanipigow River section examined during the 2000 survey (approximate scale 1cm: 500 m).

Three sites were identified near a waterfall on the north bank of the Wanipigow River: Recon Quarry (EgKw-3); Recon II (EgKw-4); and Stabbed Leg (EgKw-14). A nearby portage used to circumnavigate the falls was probably used during the Precontact Period (Figures 7 and 8).

The Recon Quarry (EgKw-3: UTM Coordinates: 305214E 5661613N) is situated atop the Wanipigow Trench approximately 500 m north of the Wanipigow River. The site is located on an exposed bedrock terrace with pockets of thin soil. Vegetation consists predominantly of jack pine that appears frequently on rock outcrops in the MbMF area and is well suited to the sparse soil that collects on the rock surface. A Pine Falls Paper Company logging road is located nearby.

Artifacts found at EgKw-3 include 18 quartz reduction flakes and 2 hammerstones. Several quartz veins run through the exposed bedrock and the site was evidently used by Precontact people as a source for stone tool material. The waterfall near the site would have required portaging and the nearby location of the quartz



- Test Pit Locations ASAP 2000
- Positive Subsurface
 - Negative Subsurface
 - △ Riverlake.shp
- Revised Combo Model
- Low Potential (11-39)
 - Medium Potential (40-68)
 - High Potential (69-97)
 - No Data



Wanipigow Trench Test Pit Locations ASAP 2000

Figure 6. Test pit locations on the Wanipigow River. (Map by D. Ebert.)



Figure 7. A steep waterfall on the Wanipigow River that would require portaging.
(Photo by G Senior).

outcrops would have enhanced the location's appeal. A prospector's claim tag located on a nearby tree attests to the intensive mineral exploration that occurred in this area.

Recon II (EgKw-4: UTM Coordinates: 304988E 5661671N) was discovered at the edge of a granitic outcrop near EgKw-3. The site consists of a stone feature that may have been a way point, a claim stake or former cache marker. Wanipigow Lake is



Figure 8. Shallow rapids along the Wanipigow River. (Photo by G. Senior).

clearly visible from this elevation. The vegetation is similar to that of EgKw-3 with moss, lichen, grasses, juniper and jack pine the predominant species, while blueberry and saskatoon bushes are also found in the vicinity. White spruce, black and poplar grow below the site.

The Stabbed Leg Site (EgKw-14: UTM Coordinates: 305029E 5661255N) is located north of the waterfall on a 15° incline with a south facing aspect. Most human activity sites are located in areas with a slope of less than 5°. The site surface is littered with moss-covered deadfall. The soil matrix in the area consists of 5 to 15 cm of dark humus over light grey clay. A single flake of jadeite was recovered within the clay stratum. Predominate vegetation includes white poplar, white spruce and balsam fir.

Four sites, JarJar Binks (EgKw-2), Whee Rapids (EgKw-13), Pirate Hill (EgKw-17) and Blair Witch (EgKw-12) were found within 200 m of each other along the north shore of the Wanipigow River. Artifacts from the sites consist primarily of large quartz flakes.

JarJar Binks (EgKw-2: UTM Coordinates: 304307E 5661527N) is located on a bluff approximately 10 to 15 m above the north side of the Wanipigow River. A set of turbulent, unnavigable rapids is located at this point of the river. Four test pits were opened which revealed a large quantity of lithic detritus including quartz, chert and rhyolite. Three 1m x 1m excavation units were established to further investigate the spatial extent of this area (Figure 9). The controlled excavation did not reveal any further information (Figure 10).

The site is bound on the south side by a steep embankment that slopes down to a narrow river terrace. Poplar stands predominate on the north and west sides of the site, while a rift feature extends along the east side. Vegetation consists of white spruce, poplar and jack pine with a dense understory on the southern slope. The approximately 3 to 4 m high white spruce is new growth, possibly the result of tree-planting projects. Woody shrubs, raspberry, saskatoon, strawberry, wild rose, purple vetch, Canadian anemone and wild columbine are also present. Soils consist of 5 to 15 cm of brown humus over lacustrine clay. Charcoal flakes, associated with rotted tree roots, were also recorded and may be the result of a natural burn.

Most of the artifacts were recovered at the humus and clay interface. Thirty-seven test pits and three 1m x 1m excavation units were opened and quartz scrapers, a rhyolite biface and a large number of stone flakes were recovered. The site is a lithic reduction workshop. Most of the artifacts recovered at EgKw-2 were primary reduction flakes however, several specimens were found that appear to be retouch flakes.

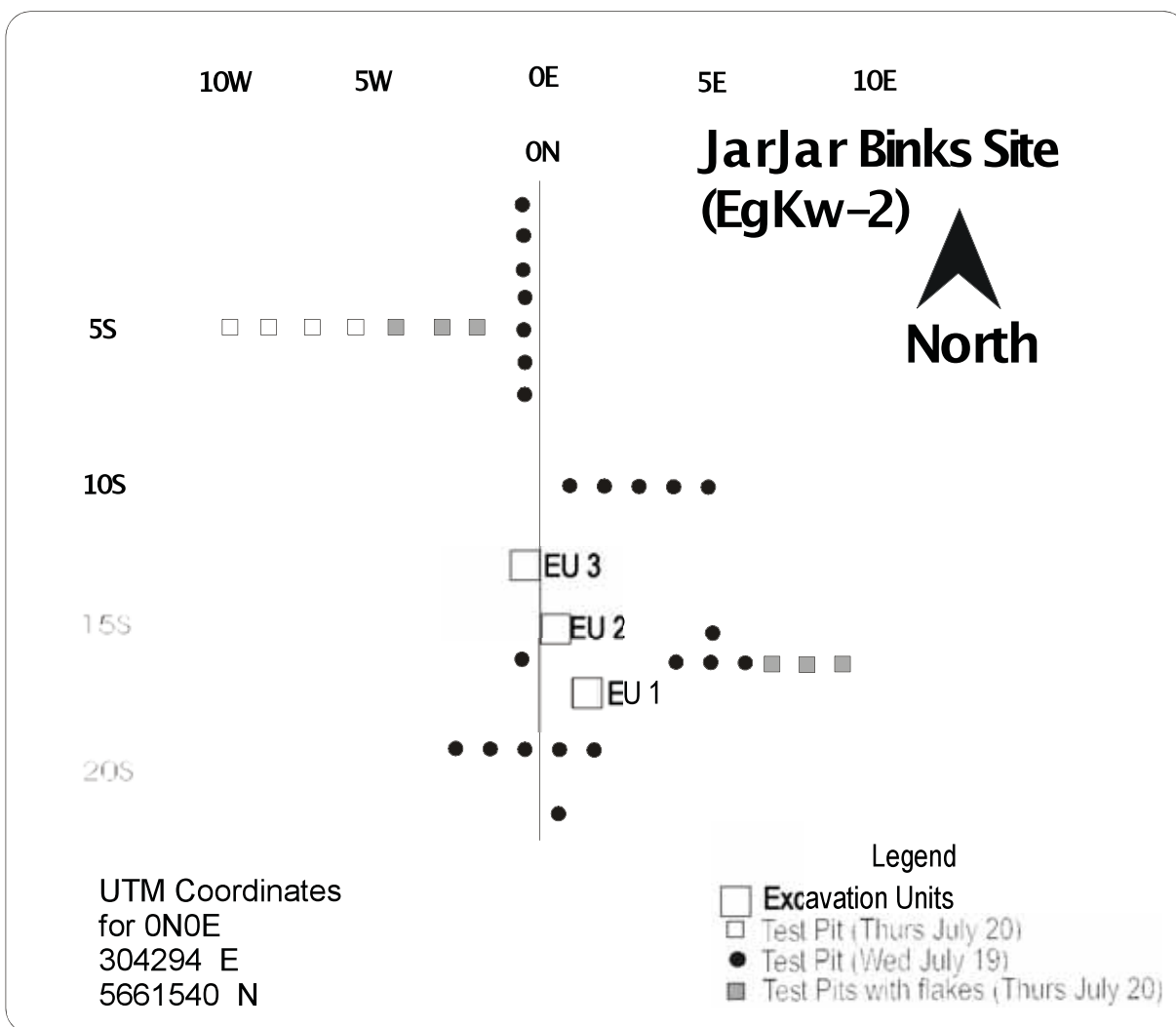


Figure 9. Sketch map of excavations at JarJar Binks Site (not to scale). (Drawn by L. Larcombe).

The Whee Rapids site (EgKw-13: UTM Coordinates: 304526E 5661338N) is located on a terrace overlooking the Wanipigow River. The site is approximately 15 to 20 m from the edge of the bank that steeply slopes south toward the river. Vegetation includes white spruce, poplar, birch, purple vetch, Canadian anemone, wild rose and a variety of grasses. Three undiagnostic quartz flakes were recovered from the Whee Rapids Site and it was concluded that this was a small workshop site.



Figure 10. Excavations in progress at the JarJar Binks Site. (Photo by G. Senior).

Blair Witch (EgKw-12: UTM Coordinates: 304484E 5661444N) is located northeast of EgKw-13. Nine quartz flakes and one chert flake were found in the humus layer. The soil matrix at Blair Witch is brown humus to a depth of 10 cm and is underlain by lacustrine clay. Vegetation is similar to EgKw-13.

Pirate Hill (EgKw-17: UTM Coordinates: 304339E 5661519N) is adjacent to the above-named sites on the north bank of the Wanipigow River. The soil consists of 5 to 10 cm of dark humus over brown clay. Low shrubs, poplar and white spruce dominate the vegetation in the immediate area.

Four test pits were opened and 11 quartz flakes, 2 rhyolite flakes and a 30.0 x 1.2 cm fragment of a rusted metal strip strap were recovered. Both the Precontact and Historic components were found in the same context at the interface between the two soil types 10 cm below surface. This disturbance may be the result of logging or silviculture activities.

The Pee-Oh-Ed Site (EgKw-15: UTM Coordinates: 304978E 5661315N), located on the same ridge as EgKw-2, is situated on a terrace 10 to 15 m above a bend in the Wanipigow River. The flora in the area is similar to that found at other sites in the area with the addition of birch. Test pits were excavated through the brown humus to a depth of 5 to 10 cm whereupon clay was exposed. Two rhyolite flakes and eight quartz flakes were recovered.

The MI2 Site (EgKw-16: UTM Coordinates: 304921E 5661341N) is located along the north shore of the Wanipigow River. Artifacts at MI2 were recovered 5 cm below the surface in the brown humus. Brown clay underlies the humus. Two quartz flakes and 1 rhyolite flake were recovered, suggesting the site was a small workshop.

The MI2 Site is level (less than 2° slope) and is located on the terrace approximately 10 to 15 m above the river. Vegetation in the area is similar to that found at EgKw-13, EgKw-12 and EgKw-17. Poplar, jack pine and white spruce predominate, while saskatoon, strawberry, raspberry, purple vetch and other weeds are found in the area. Grasses are the dominant plant species in more open areas.

Only one archaeological site, the Marker Site (EgKw-10: UTM: 303974E 5661156 N), was recorded on the south side of the Wanipigow River. The site consists of a series of stone cairns oriented along a northeast/southwest axis on top of a large bedrock outcrop above a known portage route around a series of falls and rapids. The purpose of the features is not known, as there were no associated cultural remains. A significant moss and lichen growth was present around the cairns suggesting some degree of antiquity.

The paucity of archaeological material along the south side of the Wanipigow River suggests that this section of the river was rarely used by Precontact groups. It is possible that the river was used as a conduit to connect the major campsites on nearby Wanipigow Lake with interior resource areas. Stopovers along the river were probably infrequent, brief and would have been on an “as-needed” basis. These idiosyncratic factors make site prediction difficult as proxy variables that incorporate the rationale behind human decision-making are not included in most models.

6.2 Round Lake

Arbitrary transects were conducted in the four cardinal directions along the edge of Round Lake (Figure 11 and 12). No Precontact Period sites were located on Round Lake however; sites dating to the Recent Historic Period were evident. A small lumber processing plant was located near the southeast edge of the lake between the shoreline and PR304.

The town of Bissett was located less than 1 km away from this survey area. It was necessary to circumnavigate certain areas to avoid dwellings while conducting the southern transect. A logging access road was situated along the south and east sides of the lake, while a rifle range was noted on the east side of the lake.

Round Lake is a shallow lake in the process of eutrophication and weeds are visible across its entire surface (Figure 13). Water lilies (*Nuphar variegatum*) were

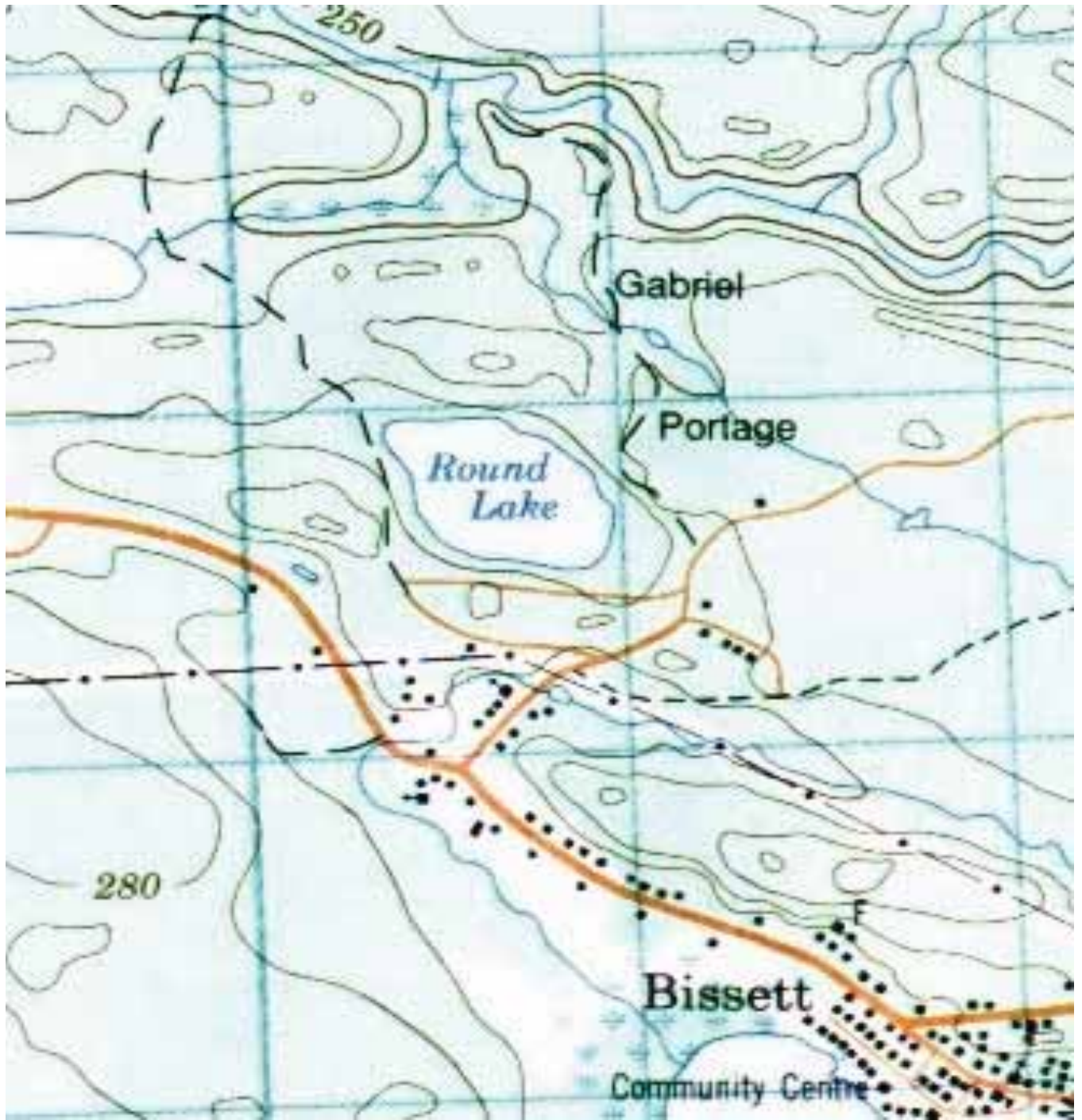
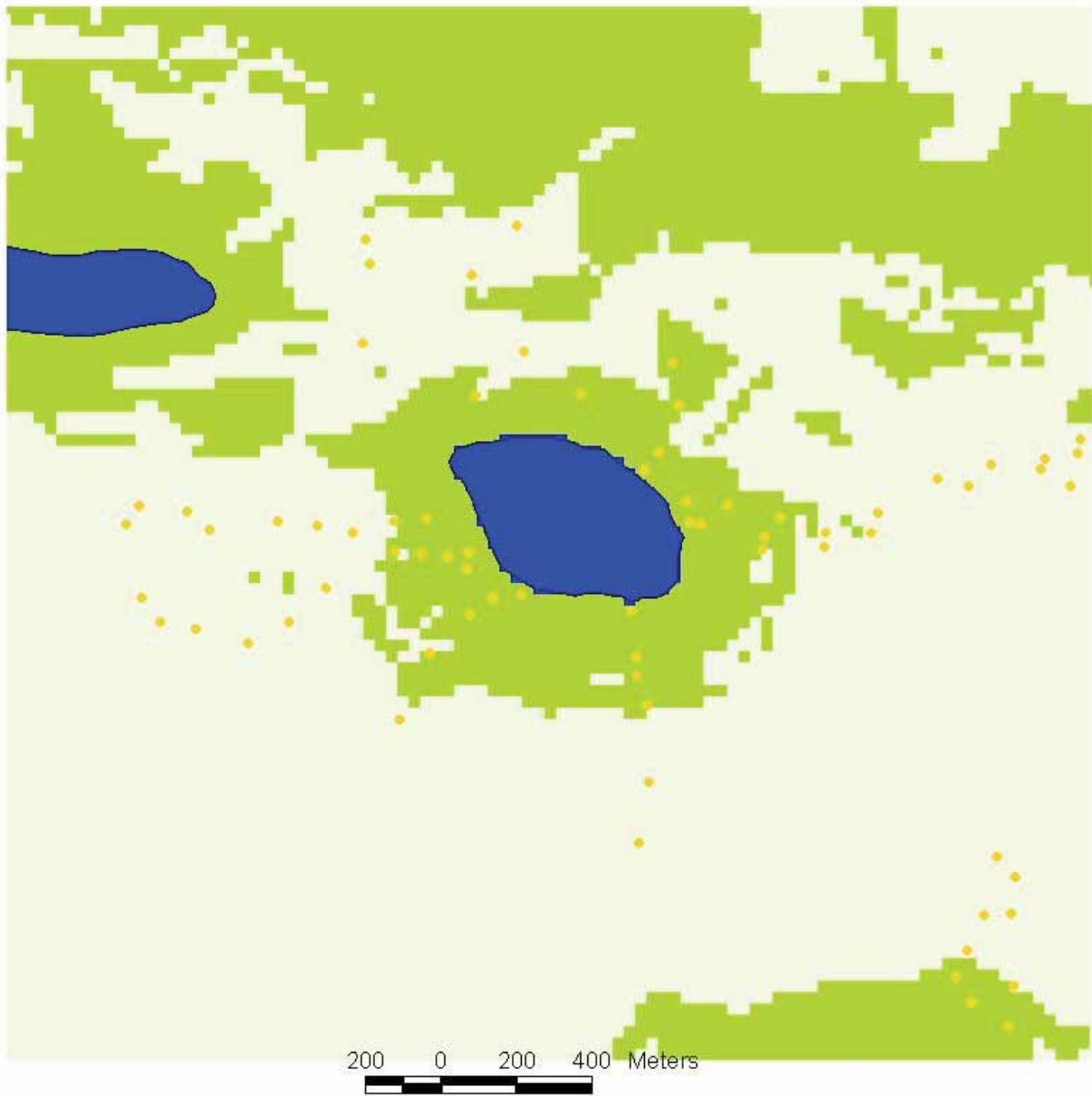


Figure 11. Round Lake study area (approximate scale 1 cm: 110 m).



- Lake1.shp
- Test Pit Locations ASAP 2000
 - Positive Subsurface
 - Negative Subsurface
- Revised Combo Model
 - Low Potential (11-39)
 - Medium Potential (40-68)
 - High Potential (69-97)
 - No Data



Round Lake Test Pit Locations ASAP 2000

Figure 12. Round Lake test pits locations. (Map by D. Ebert).



Figure 13. A.S.A.P. crew members canoeing on Round Lake. (Photo by G. Senior).

noted along the lakeshore and at least four beaver lodges were observed. In general, the land adjacent to the lake is swampy which made pedestrian survey difficult and avoiding areas of deep water was time consuming.

The flora of the area is quite diverse with two types of groundcover surrounding the lake. The cover in the lower swampy areas is comprised of several tall grasses including cattail (*Typha latifolia*) and bulrushes (*Scirpus spp.*). Wild flowers such as yellow lady slippers (*Cypripedium calceolus*), Canadian anemone (*Anemone canadensis*), tall bluebells (*Campanula spp.*), common bluebells (*Campanula spp.*), bunchberry (*Cornus canadensis*), columbine (*Aquilegia Canadensis*), yellow honeysuckle and purple vetch (*Vicia spp.*) were also noted. The area also contains scatters of strawberry (*Fragaria virginiana*) and berry bushes including saskatoon (*Amelanchier alnifolia*) and raspberry (*Rubus idaeus*).

Groundcover in areas of higher elevation, such as rock outcrops and knolls, is sparse and generally consists of moss and lichen. Ferns (*Dryopteris sp.*) are found in shaded zones and grasses (Graminoids) are usually found in open areas. Low-lying willow shrubs (*Salix humilis*), Labrador tea (*Ledum groenlandicum*) and blueberries (*Vaccinium angustifolium*) are often found along the edges of rock outcrops. Low shrubby plants such as juniper (*Juniperus horizontalis*) are often found on rock outcrops. The predominant tree is jack pine mixed with subdominant species such as birch and trembling aspen (*Populus tremuloides*).

6.3 Horseshoe Lake

Pedestrian survey and transect test excavations on Horseshoe Lake were extremely difficult to complete because of its physiographic location and low-lying shoreline particularly at its closest access point to PR304 (Figure 14). Therefore, only the south side of the lake was surveyed. Given the inaccessibility of the lake, its role in the subsistence economy of Precontact inhabitants is difficult to assess.

The Rusty Tin Cans Site (EgKw-8: UTM: 308570E 5657545N) consists of several tin cans found immediately below the surface. There were no labels on the containers to identify contents and diagnostic attributes such as fold seams and base marks suggested a post-1920 date of manufacture.

The Sawed Bone Site (EgKw-9: UTM: 308525E 5657350N) consists of a vertebral section of a large ungulate. A trail leading from PR304 to a historic midden extends close to the site and the bone may have been scavenged from the refuse area and redeposited near Horseshoe Lake.

No Precontact sites were recorded in the transects on Horseshoe Lake. This is probably due to several: (1) the wetlands surrounding the lake made access difficult; (2) construction of PR304 has previously impacted a section of the shoreline; and (3) the

steep incline of the adjacent rock outcrop does not lend itself to preferred campsite location.

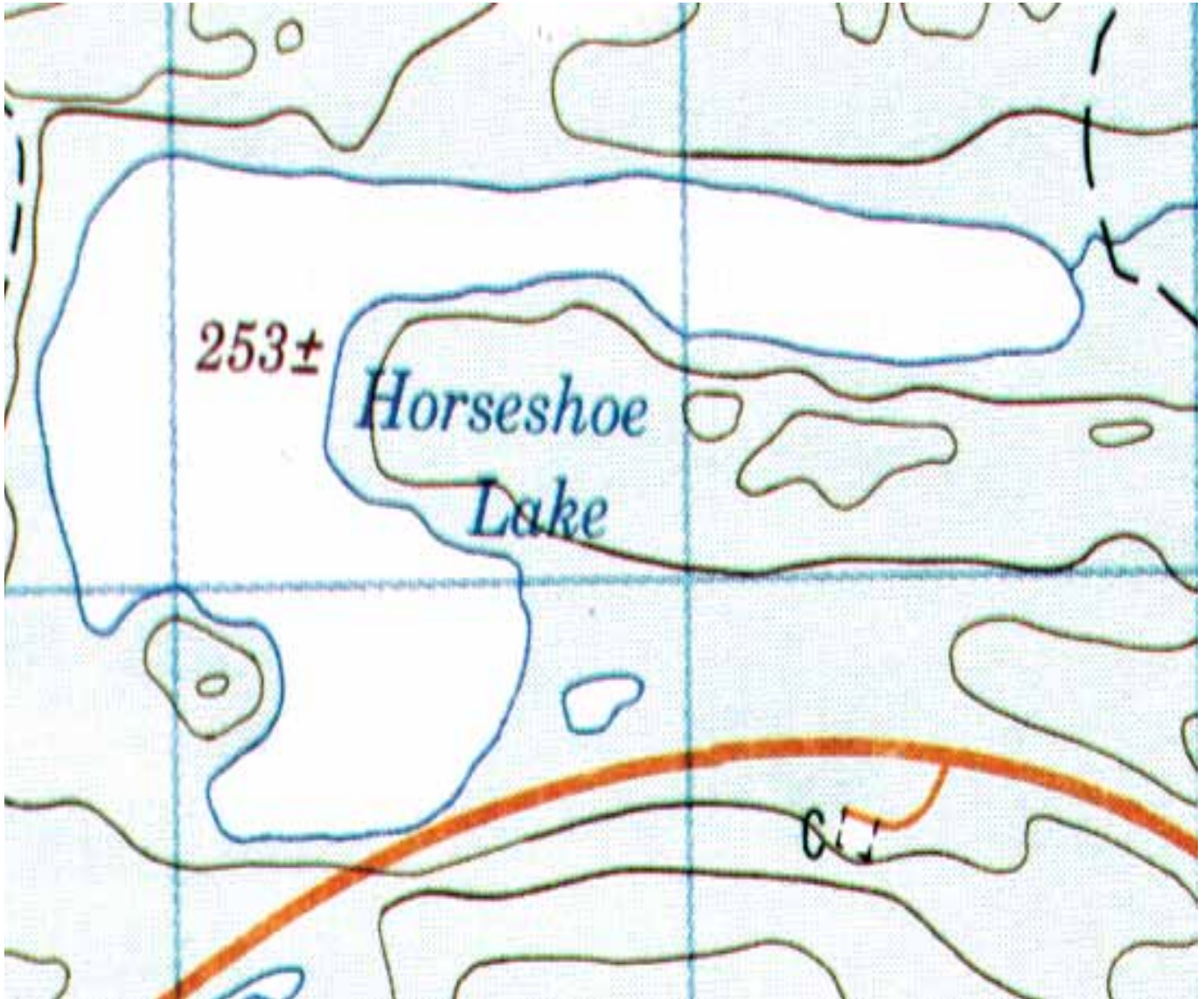


Figure 14. Horseshoe Lake study area (approximate scale 1 cm: 100 m).

6.4 Rice Lake

Transects were placed perpendicular to the shoreline of Rice Lake in areas where the predictive model indicated there was a moderate to high potential for heritage resources (Figures 15 and 16). Six sites were recorded.

Thunder Bird Nest Site⁴. (Egkw-5: UTM:311354E 5655895N) is located on the west side of Rice Lake about 15 m inland on a land slope of about 35 to 40°. The rock feature measures 2 m in diameter and 0.90 m high. The rocks are large, weighing on average 12 to 15 kg. Moss covers the rocks at the very base of the feature and, while some lichen growth was noted on the upper stones, cover was minimal. No sketches were drawn of this feature and a total count of rocks was not recorded.

Vegetation at EgKw-5 consisted of black spruce with a small, concentrated stand of poplar. Leafy understory and Labrador tea were found growing in a low-lying area northwest of the site. This site requires further examination and verification.

M2 Site (EgKw-9: UTM: 313488E 5655895 N) is located adjacent to a dirt road about 600 m east of Bissett. A large gravel pit is located between PR304 and the dirt road. A circular stone feature was noted on an exposed bedrock surface 15 m south of the gravel pit. Further investigation should be undertaken to determine the heritage significance of this ring.

The P. B. Site (EgKw-7: UTM: 312267E 5654095 N) is located on the southcentral shoreline of Rice Lake on a small spit of land that extends approximately 30 m into the lake. Vegetation including a variety of berry bushes, tall grass, prickly pear cactus (*Opuntia polycantha*) and small oak trees cover the site. A meadow edged with balsam fir lies about 10 m south of the site. No evidence of past human activity was found despite extensive testing conducted throughout this area. Only a few small bird bones, one of which displayed possible cut marks, were collected.

⁴ "Thunderbird Nest" - see Brown and Matthews article on the Thunderbird Nest.

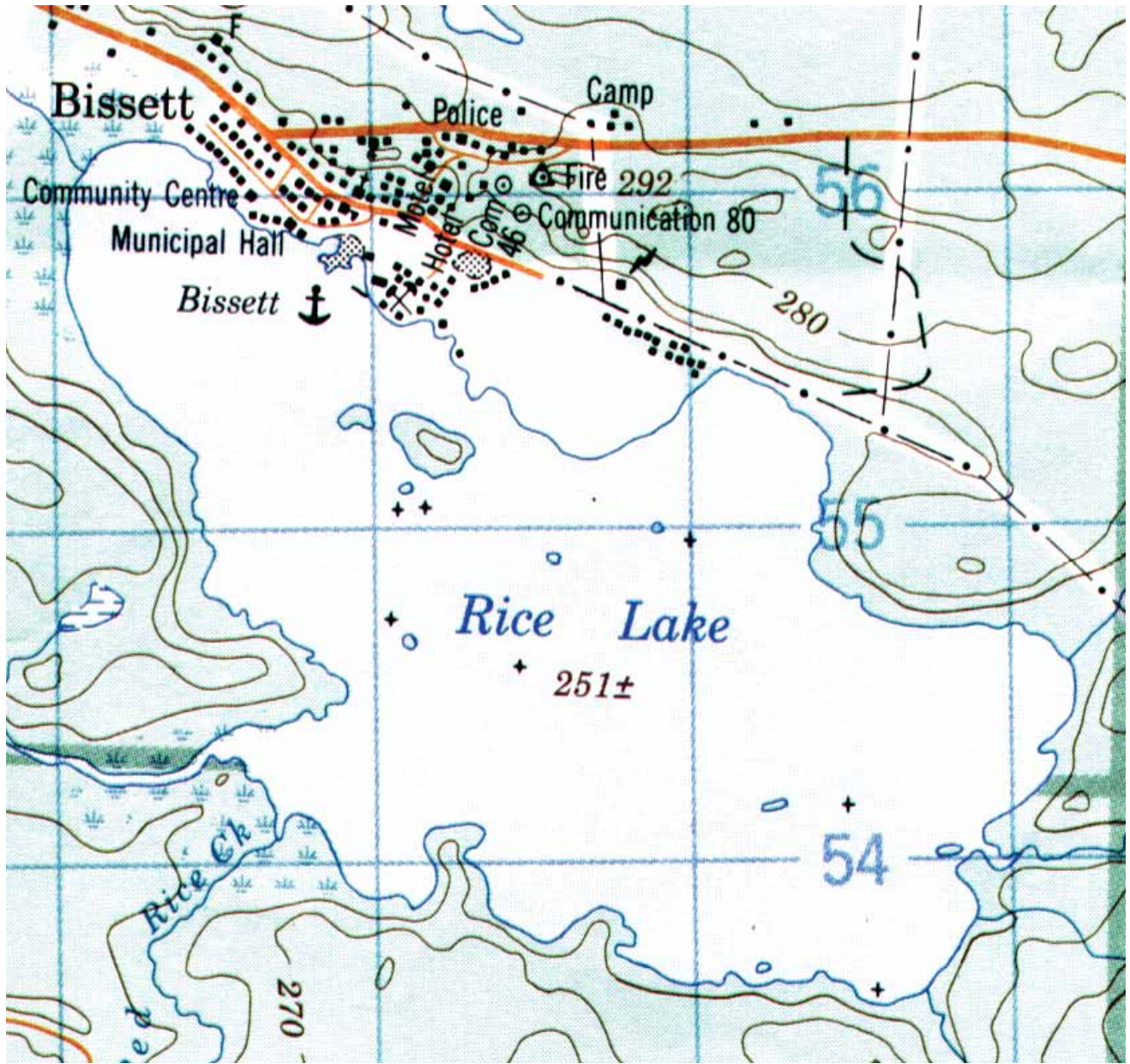


Figure 15. Rice Lake study area (scale 1 cm: 143 m).

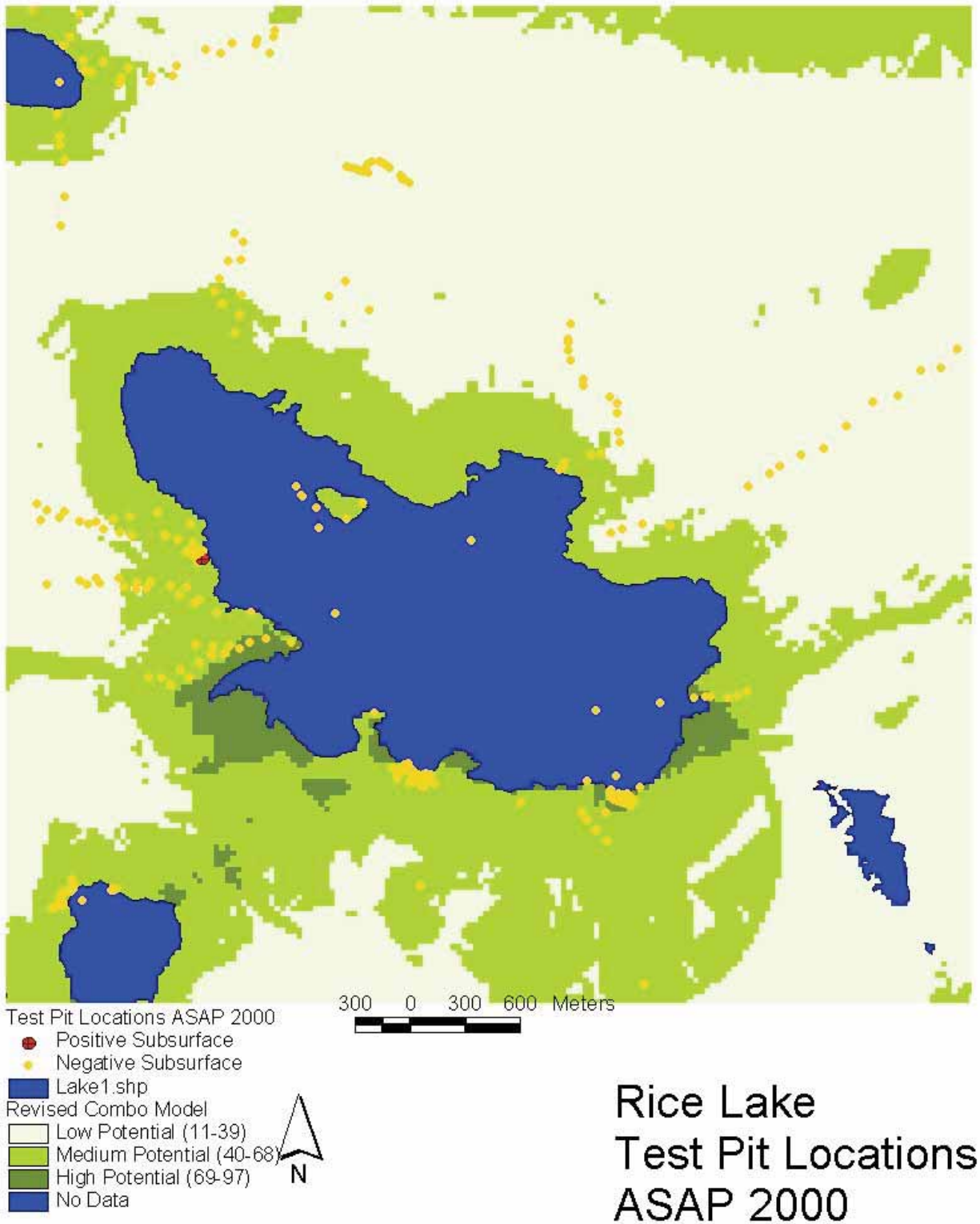


Figure 16. Rice Lake test pit locations. Map by D. Ebert.

The Scream Site (EgKw-11 UTM:311396E 5655018N) is located on Rice Lake about 15 m from the southeast shoreline. Vegetation is predominantly 5 to 8 m-tall black spruce with little ground cover. Artifacts found include a partial rhyolite biface and 26 rhyolite and quartz flakes. Most of the debitage was tertiary or pressure flakes. The flakes and biface were found 2 cm below surface in moist black organic soil. The B-horizon consisted of brown clay flecked with charcoal. Maximum depth of shovel test excavation was 24 cm below surface.

Tins Galore Site (EgKv-4: UTM:313582E 5653530N) is located 6 m from the shoreline at the southeast corner of Rice Lake. This is a Recent Historic site, probably associated with post-1920 mineral exploration, consisting of 25 to 30 rusted tin cans spread over a 20 m² area. A mounded feature, possibly a midden, was also evident. Vegetation at this site includes balsam and Manitoba maple (*Acer negundo*) saplings.

Two representative tin cans were collected. One appeared to be a meat tin and the other a bug spray canister. No temporally diagnostic attributes were evident but, given the condition of the cans, they were of recent vintage.

The Hot Rocks Site (EgKw-19: UTM:311820E 5654439N) is located 3 m from the water's edge on a lichen and moss-covered rock outcrop on the southwest shore of Rice Lake approximately 250 m northeast of the mouth of Gold Creek. Grass areas with small oak and juniper trees surround the site and several saskatoon bushes stand near the centre of the outcrop. Prickly pear cactus is predominant throughout the site.

Artifacts found at EgKw-19 consist of a mammal long bone and a chewing tobacco tin lid. The long bone was recovered 10 cm below the surface in the dark brown A horizon. The tobacco lid, identified as "Copenhagen", was located at a depth of 7 cm below the surface. As the shovel testing progressed from 15 to 40 cm deep, the soil became brown and sandy. Bedrock was exposed 40 cm below the surface.

Everquest Site (EgKw-18: UTM:311863E 5654492N) is located 16 m northeast of the Hot Rocks Site on the same outcrop and may be an extension of the same site. Everquest is located 5 m from the shoreline and consists of a single long bone (possibly from a bird), a bone flake from a large mammal and three small white chert flakes. All the artifacts were recovered within the first 6 cm of dark humus. Bedrock was exposed 15 cm below surface.

The historical record indicates that First Nation groups used the Rice Lake area primarily during the winter months. Precontact people may have camped along the lake during the winter or made periodic forays to the rock quarries in the vicinity. Many of the artifacts recovered relate to post-1920 mineral exploration activities. The two rock features, EgKw-5 and 9, require further archaeological investigation and visitation by an Aboriginal elder who is familiar with the concept of the Thunder Bird Nest.

EgKw-11, where numerous rhyolite and quartz flakes were recovered, provided the best evidence for lithic reduction activities on Rice Lake. Additional investigation at this site may recover temporally diagnostic data that would indicate cultural affiliation.

The majority of archaeological sites found on Rice Lake are united by two common variables: outcrops and workshops. However, additional and dissimilar variables were also evident at each site thereby making it difficult to establish a set of criteria for predicting a specific site type. In several instances, no physical evidence was visible at areas that contained all the criteria expected of an archaeological site.

6.5 Red Rice Lake

Red Rice Lake, a relatively small body of water with significant aquatic resources, produced only two archaeological sites (Figures 17 and 18).

The Yankee Girl Site (EfKw-9: UTM:311940E 5655221N) is a well-known quartz outcrop because of its importance for mineral exploration (Mysyk, *et al.* n.d.). It is situated approximately 1.5 km southeast of Red Rice Lake (Figure 19). Although the quartz is of poor quality, continuous mineral exploration at and adjacent to the site has exhausted the quartz source. Unfortunately, it is impossible to determine whether this occurred during the Precontact or Historic period. The Precontact quality of the quartz is similarly impossible to ascertain. Several large crudely flaked items, possibly coarse tools, were recovered at the site. Tool identification was based on morphology because determining flaking scars in such low-quality quartz was extremely difficult. The site has been impacted by blasting and other prospecting activities as evidenced by a large amount of debris on the south slope of the outcrop. This debris makes recovery of any cultural remains extremely difficult.

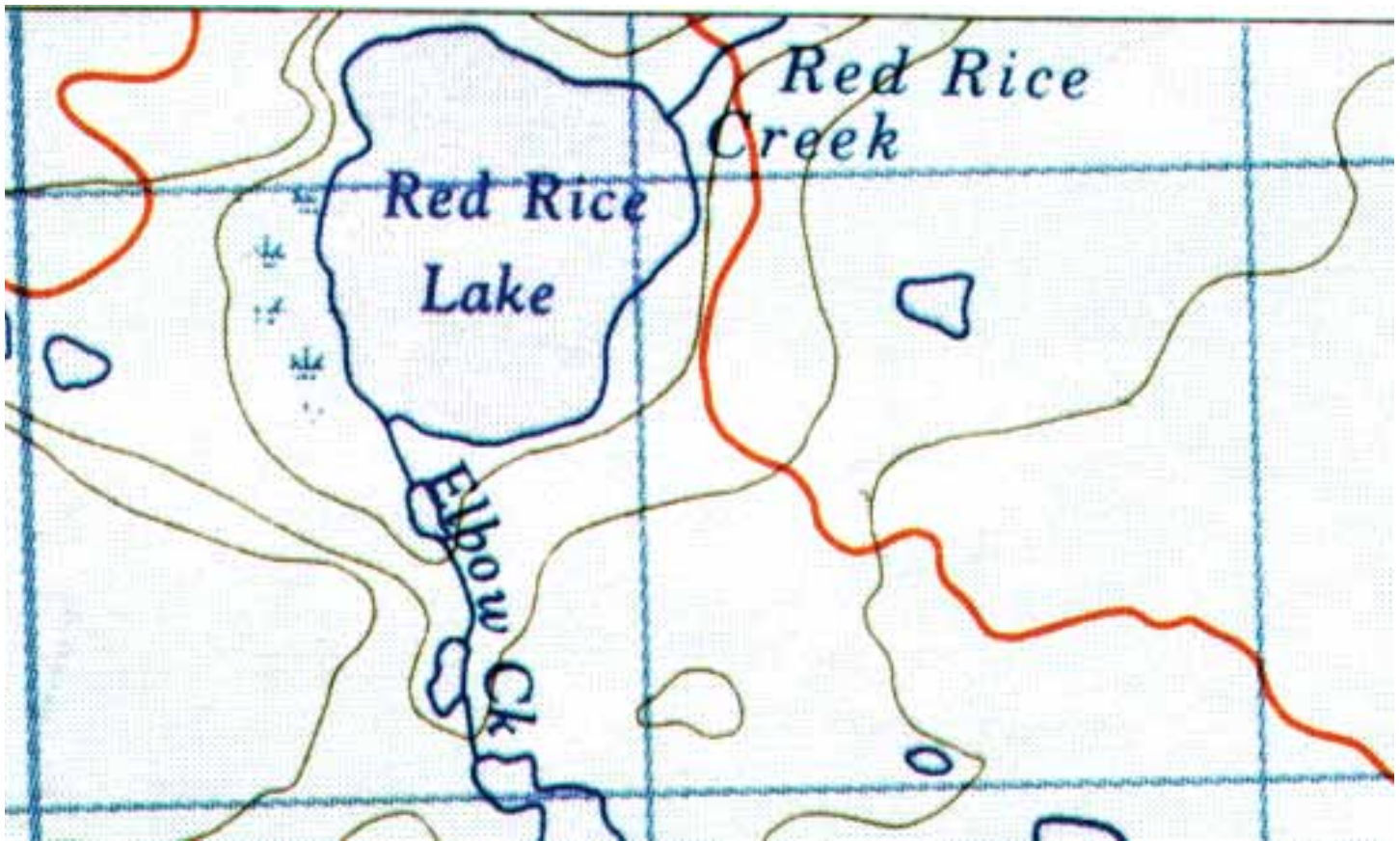
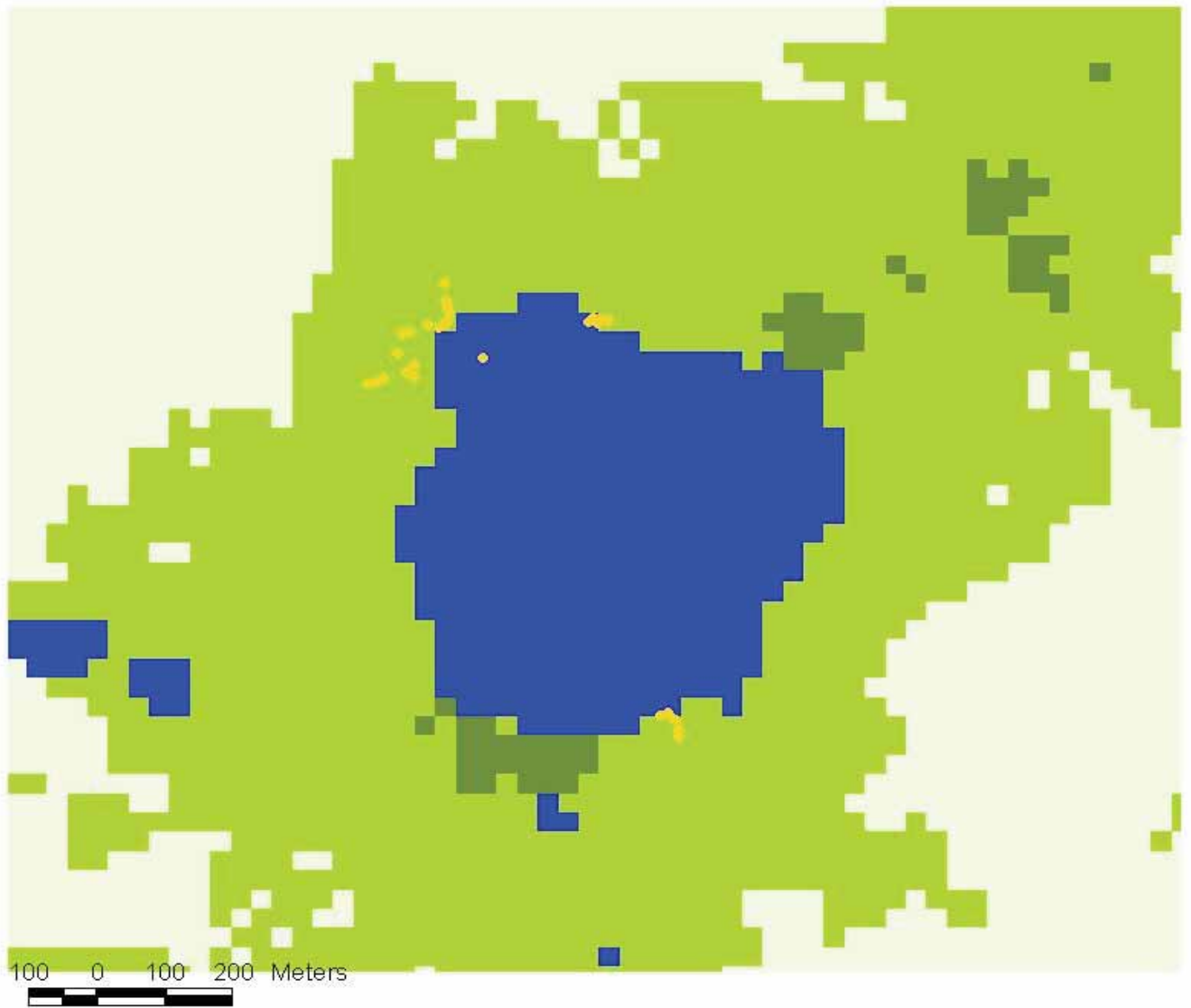


Figure 17. Red Rice Lake study area (approximate scale 1 cm: 80.0 m).

The Mine Site (No Borden Number: UTM:309899E 5652718N) is a Recent Historic Period gold mine the location of which was provided by a local geologist working in the vicinity of the Yankee Girl Site. The former mine is located on a ridge above an open plain adjacent to Red Rice Lake. The site is hazardous because of the amount of quartz debris across the site surface and the sharp drop to the plain below. Several concrete machine pads, an open mine face and the entrance to the mineshaft were mapped. The informant also mentioned building remains in the vicinity but none were located during the brief reconnaissance by the MbMF crew. Further examination of the Mine Site is recommended to map site parameters and to locate any extant building features.

Red Rice Lake showed no trace of Precontact occupation. The fact that two sites were recorded in the immediate vicinity of the lake suggests that it is the surrounding environs that are significant rather than the lake proper. The lake is basically a stone basin flanked by steep rock outcrops that offer few accessible canoe landing sites. Groups whose main camp was located either on Wanipigow Lake or Quesnel Lake may have used the Red Rice Lake area solely as a resource extraction area during the Precontact Period. The lake may also have been part of a transportation route connecting the major habitation sites on Wanipigow Lake with the larger lakes to the southeast.



Test Pit Locations ASAP 2000

- Positive Subsurface
- Negative Subsurface

Revised Combo Model

- Low Potential (11-39)
- Medium Potential (40-68)
- High Potential (69-97)
- No Data



Red Rice Lake Test Pit Locations ASAP 2000

Figure 18. Red Rice Lake test pit locations. (Map by D. Ebert).



Figure 19. Yankee Girl outcrop near Red Rice Lake. (Photo by M. Singer).

7.0 Wanipigow Lake and Hollow Water Community

Three days were spent examining sites on Wanipigow Lake and in the Hollow Water First Nation community. The A.S.A.P. crew had spent the majority of their time along the Wanipigow River system and lakes near Bissett recording quarry sites and few habitation sites. Consequently, previously recorded Precontact campsites on Wanipigow Lake were examined to show the A.S.A.P. crew the setting and types of artifacts that could be expected at this site type. The project concluded with the recording of a petroform on the south shore of Lake Winnipeg at Hollow Water.

The inventory data from all sites previously recorded on Wanipigow Lake and River were reviewed to select sites for examination (Appendix 2). Four sites were investigated during the two-day exercise on Wanipigow Lake in July 2000. Activities ranged from uncontrolled surface collection along the lake shoreline to controlled shovel testing on the embankment above the shoreline. A boulder mosaic was mapped along the shore of Lake Winnipeg using transit, stadia rod and measuring tape.

7.1 South Shore Wanipigow Lake

A portion of the Wanipigow Lake Site (EgKx-1: UTM: 296225E 5662745N) was briefly examined (Figure 20). Uncontrolled surface collection along the shoreline recovered a number of lithic flakes and water-worn fabric impressed pottery. Erosion along this section of the shoreline has removed any evidence of human occupation save for scattered deposits along the shoreline. Brush has also been cleared and a hiking path constructed at the eastern end of the Wanipigow Lake Site. No Precontact artifacts were observed in any of the recently cleared locations.

Forty-eight pottery sherds and 16 lithic flakes were recovered from along the shoreline of the Wanipigow Lake Site (See Appendix 3 and 6). No diagnostic rims were

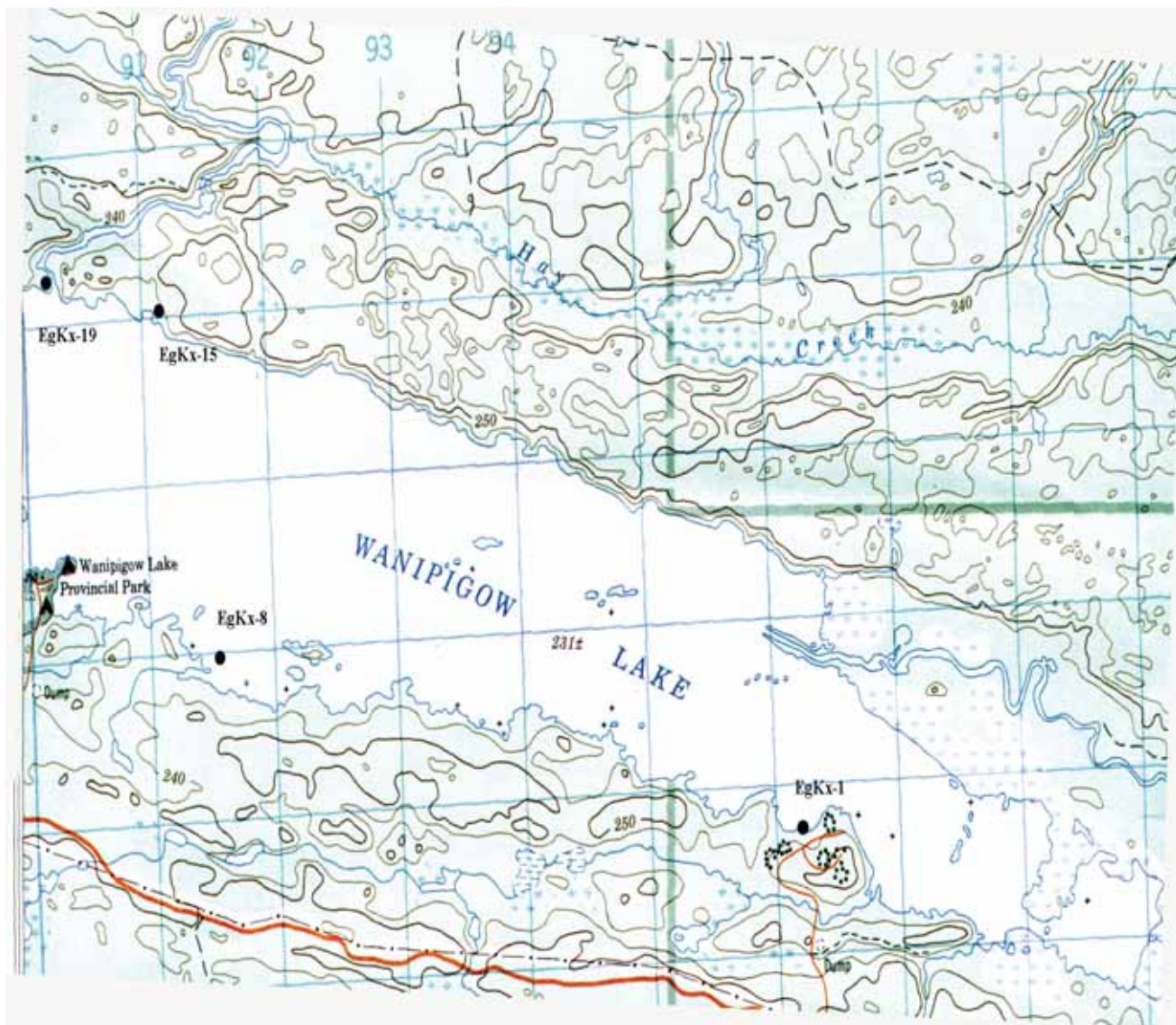


Figure 20. Location of the Wanipigow Lake Sites (approximate scale 1 cm: 500 m).

recovered but several body sherds exhibited fabric impressions. The majority of the lithics were quartzite and two displayed evidence of retouch. One was a quartz scraper with unifacial retouch along the distal surface and had been truncated laterally through the mid-section. The second tool was a greenstone projectile point that displayed bifacial retouch along both lateral edges. The point had been truncated obliquely along one lateral edge (Figure 21).

Unnamed site (EgKx-8: UTM: 291558E 5664055N) was also re-examined. The site, a thunderbird nest site, was situated on a small island east of the provincial campground. Thunderbird nest sites were identified on Rice Lake and it was anticipated that EgKx-8 would offer a good comparative example. Unfortunately, the site had been vandalized and, although a number of large stones were still visible on the east end of the island, they were no longer in a circular pattern diagnostic of a thunderbird nest site.



Figure 21. Greenstone projectile point fragment from Wanipigow Lake Site. (Scanned by Northern Lights Heritage Services Inc.)

7.2 North Shore Wanipigow Lake

Unnamed Site (EgKx-19: UTM: 290086E 5666263N) was revisited and controlled shoreline collection and shovel testing on the terrace above the lake were conducted (Figure 22 and 23). The site is multi-component with both Blackduck and Selkirk having been previously recovered. Shoreline collection began at an arbitrary datum point located at 290078E/5666260N (NAD 83). The crew then completed a pedestrian survey along the shoreline placing survey pins where artifacts were observed. Each marked artifact was mapped using a 50-m tape attached to the datum point and degrees from magnetic north to each artifact were recorded using a hand-held compass. Once horizontal provenience was recorded, the artifacts were placed in plastic bags with site name and provenience.

There were 29 artifacts recovered from the shoreline: 18 lithic flakes, 5 pottery sherds, 4 mammal bone fragments, and 1 refined white earthenware plate brim (Appendix 4). One of the flakes displayed parallel flaking on the dorsal surface and was the mid-section of a milk quartz projectile point. A gray quartz biface measuring 6.97 cm long, 5.82 cm wide and 1.47 cm thick was also collected (Figure 24). Lateral retouch was evident on both dorsal and ventral surfaces. A milk quartz axe measuring 5.52 cm long, 4.14 cm wide by 1.53 cm thick was also found (Figure 25). It, too, displayed lateral retouch on the dorsal and ventral surfaces. Four utilized flakes were collected, two of gray quartz, one milk quartz and the fourth was gray-banded chert (Figure 26). Length ranged from 1.31 to 4.16 cm, width from 1.34 to 3.36 cm, and thickness from 0.32 to 0.99 cm. Core, primary, and secondary reduction flakes were also recovered (Table 2).

Four of the pottery sherds were body fragments and all displayed fabric impressions. The fifth was from the vessel shoulder and dated to the Blackduck period as it was decorated with cord-wrapped stick impressions. The sherd was 3.18 cm long, 2.59 cm wide and was 0.57 cm thick.

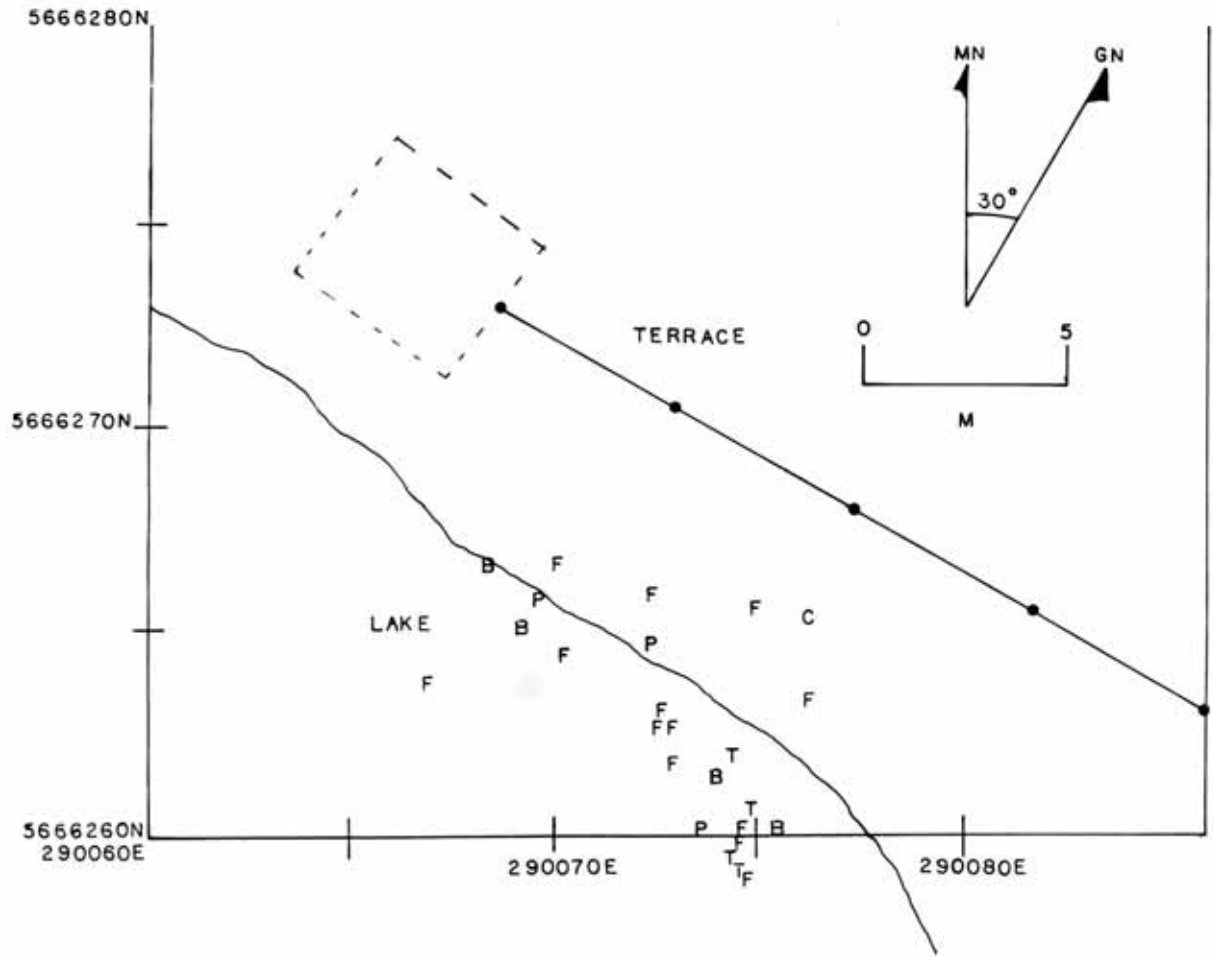


Figure 22. Location of test pits and surface collection finds at EgKx-19 (P- pottery; F- flake; T- tool; and B- bone). (Map by Northern Lights Heritage Services Inc.).

Table 2. Summary of Surface Collected Lithics from EgKx-19.

Material	Surface Collection Flake Type				
	Core	Decortication	Waste	Utilized	Total
Milk Quartz	2	1	2	1	6
Gray Quartz	0	1	0	2	3
Rose Quartz	0	0	1	0	1
Basalt	0	0	2	0	2
Brown-banded Chert	0	0	1	0	1
Selkirk Chert	0	0	1	0	1
Gray-banded Chert	0	0	0	1	1
Total	2	2	7	4	15



Figure 23. A.S.A.P. crew members testing at EgKx-19. (Photo by Northern Lights Heritage Services Inc.).

Other artifacts collected included three long bone fragments from a large mammal, a rib fragment from a medium-sized mammal and the brim section from a refined white earthenware plate. The brim displayed a hand-painted green and red floral design and probably related to the post-1900 mink farm.

Controlled test excavations were conducted in a grassed area on the terrace that was 2.5 to 3.0 m above the shoreline. An arbitrary datum was established at 15-290086E/5666263N (NAD83) and a 20 m long east-west transect line 60° west of magnetic north was marked using a 50-m tape and compass. Shovel tests were placed at 5 m intervals along the transect line. A rectangular structural feature was observed and mapped near the 20W pin and are remnants of a former mink farm. The east wall of the structure was 4.0 m long, the north wall 4.5 m. A rusted tin can was observed on



Figure 24. Gray quartz biface found along shoreline of EgKx-19. (Scanned by Northern Lights Heritage Services Inc.)

the surface 5.0 m east of the foundation indicating that debris was scattered across a portion of the terrace. Several depressions and a privy pit were observed in dense bush approximately 5 m west of the 20W point.

Soils at EgKx-19 are of the Orthic Gray Luvisol series and are similar to those excavated at EgKx-15 located 0.5 km east (Carmichael 1979:12). The L-H organic layer at EgKx-19 was approximately 5 cm thick and was removed in one piece from each excavation unit. The Ae_j layer is 5 to 9 cm thick and is gray to light gray heavily consolidated clay. Beneath this is the B horizon consisting of gray alluvial clay. No tests were excavated below the B horizon. Precontact artifacts were found directly beneath the sod and continued into the B horizon. Several quartz and chert reduction flakes were recovered as were several Blackduck rim and body sherds. The rim was

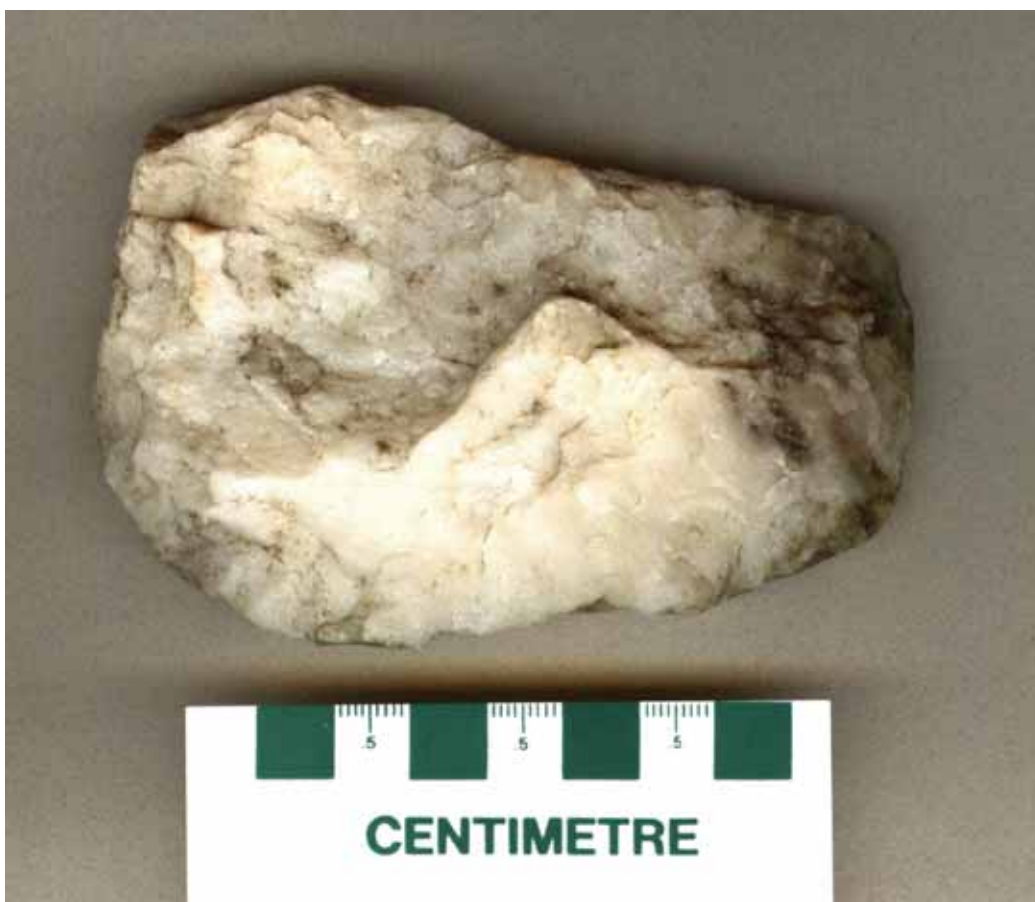


Figure 25. Milk quartz axe found along shoreline of EgKx-19. (Scanned by Northern Lights Heritage Services Inc.)

recovered at a depth of 15 cm below the ground surface in Test 0/0. Because only a limited amount of time could be spent at EgKx-19, shovel tests were excavated to a variety of depths depending on the expertise of the researcher. The deepest unit dug was at datum (20 cm below the surface) and artifacts were still being recovered at that depth. All tests were backfilled prior to leaving the site.



Figure 26. Utilized flakes found along shoreline of EgKx-19 (Left – quartz; right – gray-banded chert. (Scanned by Northern Lights Heritage Services Inc.)

There were 79 artifacts recovered from the test excavations (Appendix 4). A portion of a gray quartz biface was recovered from Test 0/0 (Figure 27). It measured 5.41 cm long, 5.26 cm wide, was 1.36 cm thick and displayed lateral retouch along both the dorsal and ventral surfaces. The specimen had been truncated laterally and obliquely. A milk quartz scraper was also recovered from Test 0/0 (Figure 28). It was 1.45 cm long, 2.69 cm wide, 0.74 cm thick and exhibited retouch along the distal end. The artifact had been broken laterally. Test 0/0 also produced a milk quartz and a clear quartz utilized flake. The former was 1.56 cm long, 2.59 cm wide, 0.49 cm thick and had lateral retouch on the ventral surface. It appeared to have been heat altered. The clear quartz flake was 2.15 cm long, 1.19 cm wide, 0.24 cm thick and was retouched laterally on the dorsal surface. The remainder of the lithic assemblage found in the shovel tests was either primary, secondary or tertiary waste flakes (Table 3).



Figure 27. Gray quartz biface recovered from Test Pit 0/0 at EgKx-19. (Scanned by Northern Lights Heritage Services Inc.)

Seventeen pottery sherds were recovered from the test pits. Test 0/0 produced a Blackduck rim 15 cm below the surface. The rim was 2.15 cm long, 2.39 cm wide and 1.01 cm thick. Rim decoration consisted of vertical cord impressions, lip decoration was oblique cord and the vessel lip was pinched (Figure 29). Test pit 0/0 also contained pottery that displayed Sturgeon Punctate designs similar to that recorded in the Whiteshell and at the Lockport Site (MacNeish 1958:170).



Figure 28. Quartz tools recovered from Test Pit 0/0 at EgKx-19. (Scanned by Northern Lights Heritage Services Inc.)

Table 3. Summary of Lithics Excavated from EgKx-19.

Material	Test Units Flake Types				
	Decortication	Waste	Thinning	Utilized	Total
Clear Quartz	0	2	0	1	3
Milk Quartz	5	5	0	1	11
Gray Quartz	2	2	0	0	4
Green Quartz	0	1	0	0	1
Brown Quartz	0	1	0	0	1
Rose Quartz	0	1	0	0	1
Gray-banded Chert	0	1	0	0	1
Chalcedony	0	0	1	0	1
Total	7	13	1	2	23

Mammal, turtle, fish and bird bone were recovered in the tests. Several mammal bones were charred and a quantity of fire cracked rock was found in Test 20W/0. This test also coincided with the historic structure but it is probable that the fired rock relates to the Precontact occupation.

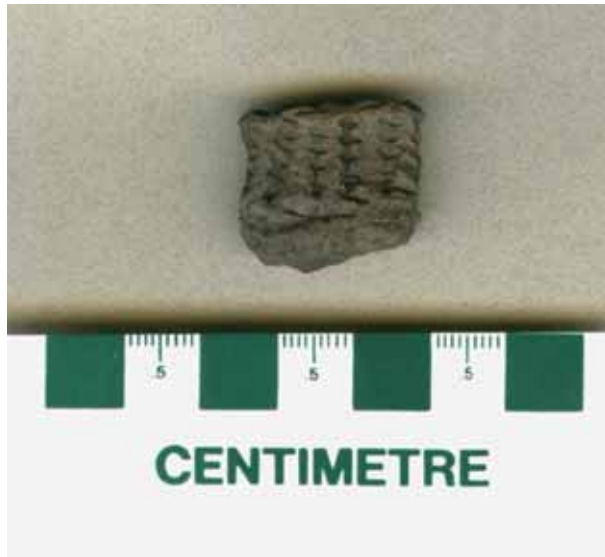


Figure 29. Blackduck pottery recovered from Test Pit 0/0 at EgKx-19. (Scanned by Northern Lights Heritage Services Inc.)

Testing parallel to the lakeshore at EgKx-19 proved that the site is fairly extensive both horizontally and vertically. Time did not allow for additional tests to be excavated north and east of the test datum to fully ascertain site parameters. Any future excavations at the site should incorporate a mixture of additional testing to identify the site limits as well as controlled metre-square excavation to accurately record the cultural sequences.

Thunderbird Nest Site (EgKx-15: UTM: 291355E 5665947N) was also re-examined. No evidence of the former mid-1970 excavations was observed and no additional artifacts were observed along the lakeshore (Carmichael 1979).

7.3 Hollow Water Community

Hollow Water Petroform Site (EhLb-5: UTM: 688846E 5674938N) consisted of four petroforms constructed of large to medium-large boulders on the south shore of

Lake Winnipeg in the Hollow Water community (Figure 30). Several members of the A.S.A.P. crew knew of the site but there was no consensus on the antiquity of the feature. Some believed it had been built within the last year, while others were of the opinion that it had been in existence for considerable time. Nevertheless, the site provided an opportunity to familiarize the crew with standard archaeological mapping procedures. The site consisted of four features, two turtle effigies 42 m apart connected by two discrete snake alignments.

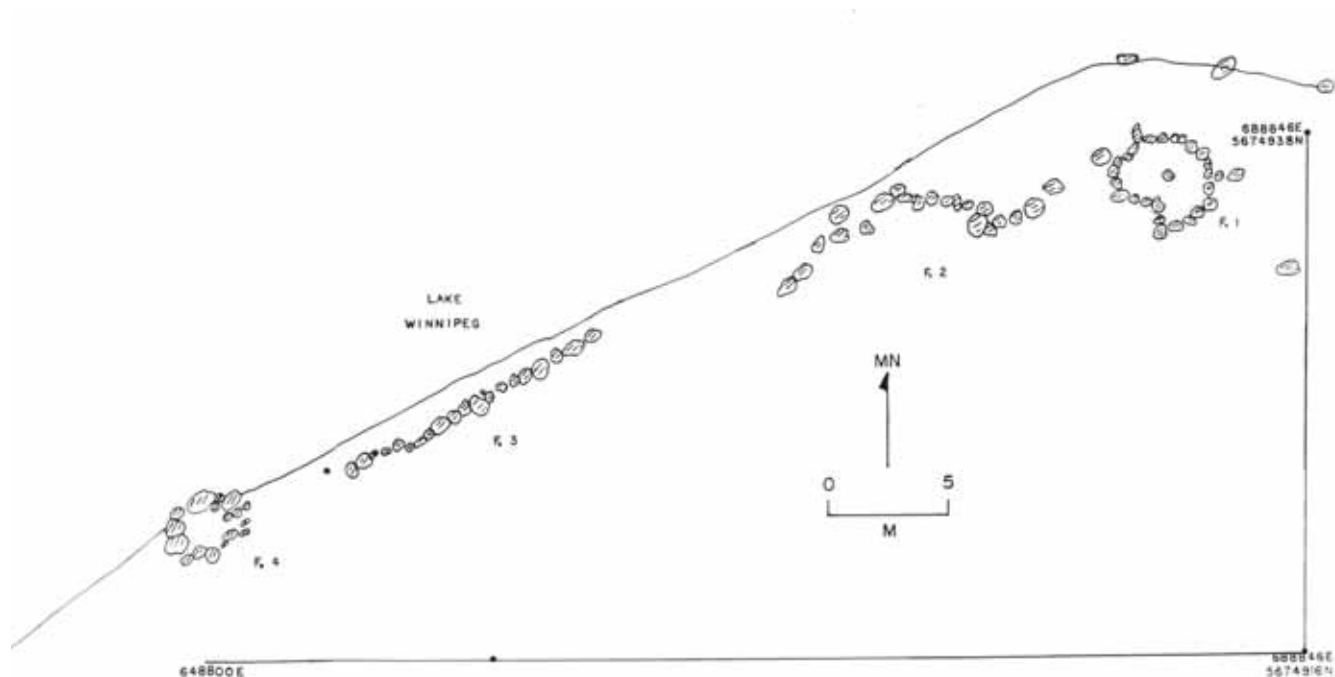


Figure 30. Hollow Water Petroform Site. (Map by Northern Lights Heritage Services Inc.)

An arbitrary datum was established along the lakeshore several metres east of the eastern terminus of the site. Datum was at 688846E/5674938N (NAD83). All rocks were mapped using transit and 50-m measuring tape with angles recorded east of magnetic north (Figure 31). As the site was mapped, other crewmembers numbered each stone and recorded the dimensions using a 50-m tape.



Figure 31. A.S.A.P. crew and Northern Lights Heritage Services Inc. staff recording petroform at Hollow Water. (Photo by Northern Lights Heritage Services Inc.).

Feature 1 is a turtle effigy consisting of 28 stones covering an area of about 4 m². The feature is oriented east-west with the “head” stone at the west end of the feature and two smaller tail stones on the east side (Figure 32). Features 2 and 3 are both snake effigies (Figure 33). Feature 2 consists of 21 stones extending southwest to northeast over a distance of 12 m parallel to the lakeshore. Feature 3 contains 20 stones aligned linearly over an area of 11.5 m. Feature 4 was a second turtle effigy consisting of 17 stones across a 4 m east-west by 3 m north-south area. The north edge of the effigy lies in the water (Figure 34).

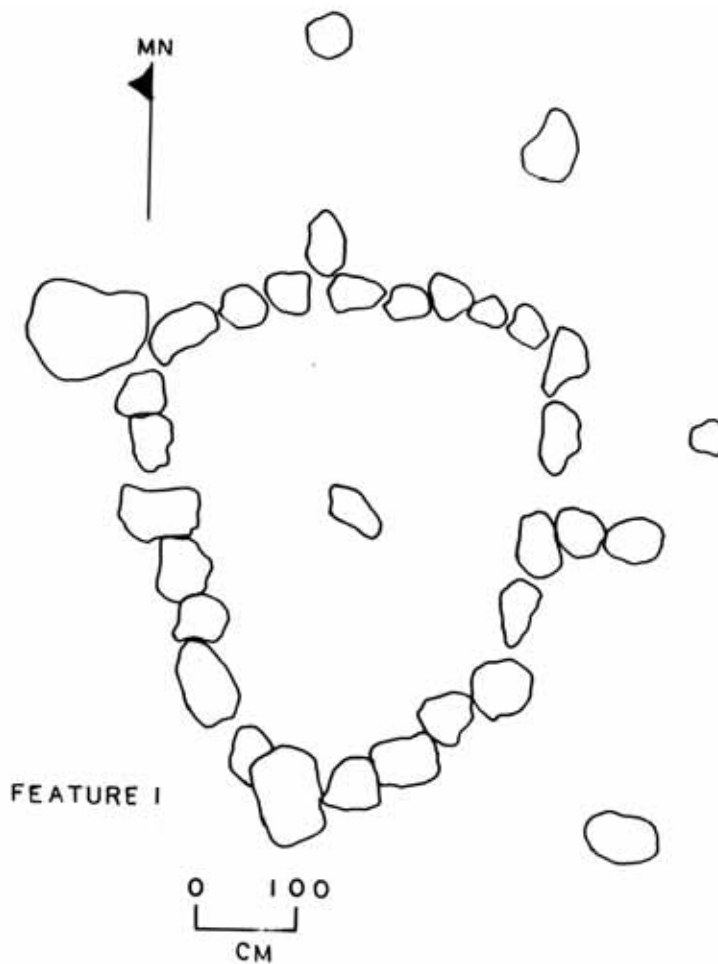


Figure 32. EhLb-5 Feature 1. (Map by Northern Lights Heritage Services Inc.)

Turtle and snake effigies are the most commonly found petroform in southeastern Manitoba (Steinbring 1983). The Hollow Water turtle showed a high degree of similarity to those recorded at the Basket Falls/Rainbow Falls Site on the Whiteshell River (Danziger and Callahan 1983:99 - 106). Turtle, snake and line effigies have been recorded throughout eastern Manitoba and as far north as the Pigeon River (Petch 1994). Table 4 summarizes petroform effigies that have previously been recorded in the Whiteshell.

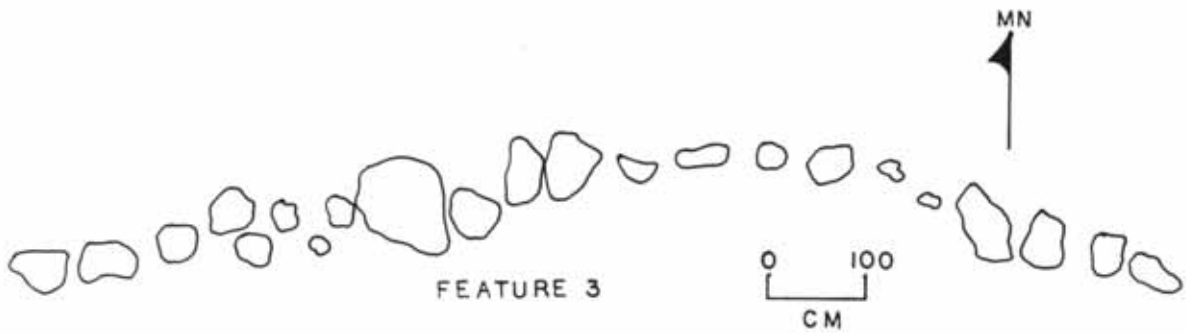
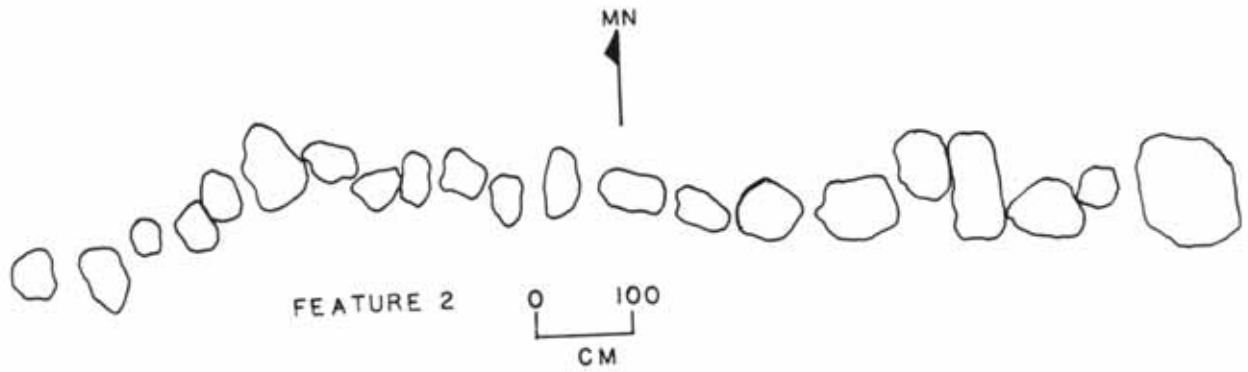


Figure 33. EhLb-5 Features 2 and 3. (Map by Northern Lights Heritage Services Inc.)

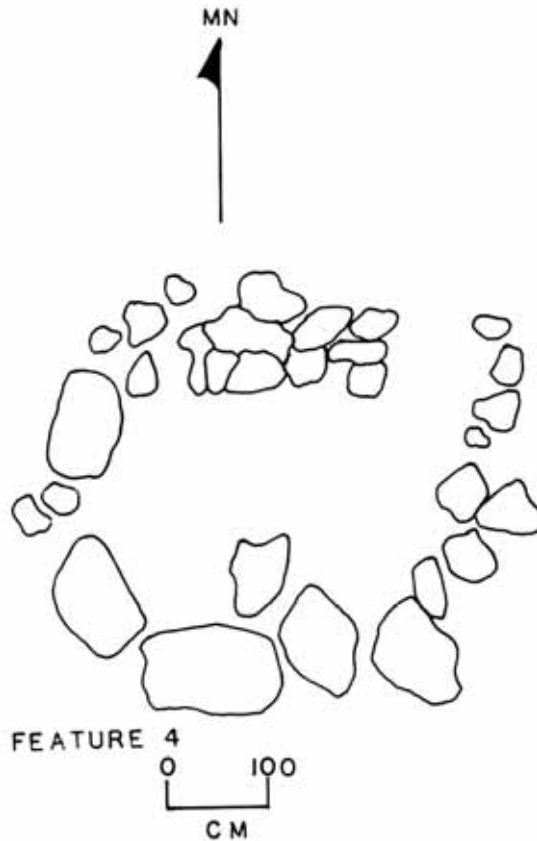


Figure 34. EhLb-5 Feature 4. (Map by Northern Lights Heritage Services Inc.).

8.0 Black Island

On August 1st A.S.A.P. was invited to conduct an archaeological demonstration on Black Island during Hollow Water's Black Island Days. The island has been a gathering place for the Ojibwa people for hundred of years and continues to be used as a gathering place. In the late 1790s the HBC established a wintering post on the northeast side of the island (Lytwyn 1986). Hind's 1858 map of the western Canadian interior shows present-day Black Island called Grand Island, while present-day Hecla Island is identified as Black Island (Hind 1971). Geological surveys of the area in 1879 make reference to Aboriginal activities on Black Island.

Table 4. Summary of Whiteshell and Area Petroforms (from Danziger and Callaghan 1983).

Site Name	Feature #	Form	Length (m)	Orientation
Redrock Lake	1	Turtle	3.9	NE
Bannock Point	2	Turtle	3.5	W
Rainbow Falls	1	Turtle	2.9	SE
Rainbow Falls	3	Turtle	3.0	E
Rainbow Falls	4	Turtle	3.4	E/W
Rainbow Falls	5	Turtle	12.8	Not Given
Big Whiteshell	2	Turtle	Not given	E/W
Pine Point	2	Turtle	12.8	Not Given
Jessica Exit	1	Line	4.5	NE/SW
Jessica Exit	2	Line	3.6	NE/SW
Jessica Exit	3	Line	1.8	NE/SW
Tulabi Falls	1	Line/Snake	12.0	NE/SW
Bannock Point	1	Snake	3.5	E
Bannock Point	1	Line	35.2	Not Given
Scarfe	2	Line	9.0	NE/SW
Tie Creek Area 5	1	Line	6.8	NE/SW
Tie Creek Area 7	1	Line	15.2	NW/SE
Tie Creek	6	Line	3.6	NE/SW
Lac du Bois	1	Snake?	8.2	NW/SE
Lac du Bois	2	Snake?	6.7	SW/NE
Sweet Creek	1	Line	3.0	Not Given
Reed Falls	1	Circle	1.5	N.A.
Redrock Lake	2	Circle	3.2	Gate W.
Jessica Lake	2	Circle	1.9	N.A.
Jessica Lake	4	Circle	2.7	SW
Rainbow Falls	2	Circle	5.7	N.A.
Scarfe	1	Circle	5.4	Gate W.
Tie Creek Area 1	1	Circle	3.3	N.A.
Tie Creek	5	Circle	6.1	Gate W.
Tie Creek	7	Circle	12.2	Gate W.
Bernard Lake	1	Circle	5.0	N.A.

The survey demonstration began by establishing two 60 m long transects 5 m apart parallel to the lakeshore. The UTM coordinates at 0N/0E were 682202E 5681857N (NAD83). Survey pins to mark shovel test locations were placed along each transect line at 10 m intervals. Each crewmember was then assigned to excavate a 50 cm by 50 cm test unit (Figure 35). The entire assemblage recovered from the shovel tests was minimal *and* dated from the Late to Recent Historic period. Many of the people attending Black Island Days took the opportunity to speak with the crew about



Figure 35. A.S.A.P. crewmembers excavating on Black Island. (Photo by Northern Lights Heritage Services Inc.).

the archaeological work. It was a chance for the crew to share their experience and newly acquired knowledge of archaeology with the community.

On the following day, a GPS survey was conducted of the camping area. The students recorded and mapped the traditional camping locations of the families from Hollow Water. During the GPS survey, a pedestrian surface survey of the camping areas was conducted. No significant cultural material was recovered during this exercise.

Several A.S.A.P. crewmembers conducted a pedestrian survey of the shoreline on the southeast side of Black Island (Figure 36). The survey began by heading



Figure 36. A.S.A.P. crew hiking on Black Island. (Photo by G. Senior).

southwest to a small bedrock point (684126E 5677160N). The survey team then headed back to the northeast and examined the shoreline beaches. Several uncontrolled test pits were excavated behind two of the beach ridges but no artifacts were recovered. The crew met Mr. Kennedy, a Hollow Water resident, at Grey Point which was formerly an island until a causeway was constructed in the late 1950's or early 1960's to connect this point with Black Island. Until the mid-1970's it was possible to travel by ferry from Seymourville to the landing at Grey Point and then journey across Black Island to a boat that ferried people and goods to Hecla Island. The route was also used by silica miners and, to a lesser extent, tourists.

A brief reconnaissance survey was conducted at Drumming Point (UTM 685409E 5681504N). Drumming Point is a well-known ceremonial site for the Anishinabe of the area. The ridgepoles of a tipi and a number of shallow pits were found in a grassy clearing behind a bedrock knoll that extended into the water.

9.0 Analysis of Field Component

The field survey conducted by the A.S.A.P. crew consisted of transect series established at Rice, Horseshoe, Round and Red Rice Lakes as well as along a reach of the Wanipigow River from Currie's Landing east to Gabriel Portage. The transects and subsequent shovel tests revealed several Precontact quarry sites with subsurface concentrations of lithic reduction flakes (Table 5). The presence of granitic hammerstones at these sites verified lithic extraction. Recent historic litter, mainly rusted tin cans scattered throughout the bush, is probably related to mineral exploration rather than mining because no large machinery and/or structures were recorded.

Table 5. Summary of Testing by the A.S.A.P. 2000 Manitoba Model Forest Project.

Location	Total Transects	Total Test Locations	Total Positive	Total Negative
Wanipigow River	15	233	8	225
Horseshoe Lake	1	9	2	7
Round Lake	4	69	0	69
Rice Lake	25	216	6	210
Red Rice Lake	5	58	1	57
Wanipigow Lake	1	5	5	0
TOTAL	51	590	22	568

Stone configurations may represent thunderbird nests. These cultural features are associated with the predecessors of the Anishinabe. The features, however, were not thoroughly recorded but they are easily accessible and should be revisited for confirmation. Other rock features may be the remains of caches or way markers. The latter would have been of extreme importance to gold prospectors traversing the area.

No Precontact pottery was found at any of the sites recorded by the A.S.A.P. crew. Sherds were found only on Wanipigow Lake at EgKx-1 and Egkx-19. This suggests that the shoreline of the larger lake was more conducive for seasonal settlement than the smaller lakes, viz. Rice, Red Rice and Horseshoe and the Wanipigow River. These areas may have been used for the extraction of specific resources such as quarry sites, clay for pottery or harvesting areas. In other regions of the boreal forest, rest stops at portages around rapids typically yield the occasional worked lithic tool or flakes or sherds of pottery, inferring that Precontact people utilized local resources. The Wanipigow River may have been used only as a transportation route in much the same manner as we currently use our highways.

10.0 Summary and Conclusion: F₁ Archaeological Predictive Model Testing

The field testing carried out by A.S.A.P. 2000 was designed to test the strength of the F₁ Archaeological Predictive Model (Petch *et al.* 2000). This model was generated to examine the nature of archaeological site locations in the boreal forest of east-central Manitoba.

The rationale for testing a predictive model is to validate any assumptions that have been made during the modeling process and to refine knowledge on these assumptions, as well as to sample in zones where archaeological potential has not

been evaluated (Kvamme 1988). Field testing is also designed to test the littoral bias detected in the known archaeological site location data. Specifically, it was decided to examine whether this relationship was due to the actual pattern of Precontact inhabitants in the region or due to archaeological phenomena, such as visibility or survey bias.

The survey was designed to sample every 100 m along transects 1000 m long, with a spacing among crewmembers of 5 m. This transect length was chosen as it represented double the distance to water buffer used by the F₁ Model and would test areas of low potential. During the field season in excess of 2000 test pits were dug at almost 600 sampling locations. Environmental data were collected for both site and non-site locations to further examine the pattern of archaeological site location in this region.

After several areas had been tested it became apparent that 1000 m transect lengths with the 100 m sample intervals were not realistic. Therefore, the testing strategy was modified to reduce the transect length to 500 m with sampling every 50 m. During the final phase of the project, this distance was further shortened to 100 m transects sampled every 10 m.

10.1 Rationale for Test Site Locations

The locations selected for study were based on ethnographic and ethnohistorical accounts of land use by Precontact inhabitants of the Boreal Forest (c.f. Bishop 1970, 1972, 1981 and 1986; Hickerson 1988; Larcombe 1994; Malasiuk 1999; and Rogers 1962 and 1963).

Inhabitants of the boreal forest were known to aggregate on the large lakes from spring to early fall to take advantage of seasonally available resources. The abundance

of food resources during the warmer months of the year allowed for nuclear and extended families to gather. In winter, however, these groups divided into smaller family-based units and dispersed into the interior to exploit a larger resource area.

Another advantage of working in the study region was the lack of previous archaeological research in the region. Only one archaeological site had previously been identified on the section of the Wanipigow River from its mouth to Gabriel Portage and no known sites had been recorded on Round, Horseshoe, Rice or Red Rice lakes.

10.2 Testing Results

Twenty-one new archaeological sites were discovered during the survey (Table 6). Of these, 14 were located in zones of medium archaeological potential, 2 were recorded in zones of high potential and the remaining 5 were found in zones of low archaeological potential.

Seventeen sites are the result of quarry, special use or lithic reduction activities. No temporally diagnostic artifacts were found at these sites and, without radiometric testing, it is difficult to assign a cultural affiliation. The remaining four sites are from the Historic Period.

Table 6. Sites recovered by the 2000 A.S.A.P. Survey in the MbMF.

Number	Relative Age	Site Name	UTM East	UTM North	Potential
EgKw-8	Historic	Rusty Tin Cans	729236	5659085	Medium
EgKw-9	Historic	Sawed Bone	729027	5658887	Medium
EfKw-9	Precontact	Yankee Girl	733026	5654082	Low
No Number	Historic	Mine	730954	5654381	Medium
EgKw-10	Undated	Marker	724361	5662311	Low
EgKw-3	Undated	Recon Quarry	725559	5662867	Low
EgKw-4	Undated	Recon II	725329	5662907	Low
EgKw-14	Undated	Stabbed Leg	725404	5662495	Medium
EgKw-2	Precontact	JarJar Binks	724662	5662708	Medium
EgKw-13	Undated	Whee Rapids	714896	5662537	Medium
EgKw-12	Undated	Blair Witch	724846	5662639	Medium
EgKw-17	Undated	Pirate Hill	724695	5662702	Medium
EgKw-15	Undated	Pee-Oh-Ed	725357	5662552	Medium
EgKw-16	Undated	MI2	725290	5662572	Medium
EgKw-5	Undated	Thunderbird Nest	732210	5656876	Medium
EgKw-3	Undated	M2	734273	5657840	Low
EgKw-7	Undated	P.B.	733202	5655947	Medium
EgKw-11	Undated	Scream	732259	5656796	Medium
EgKv-4	Historic	Tins Galore	734559	5655490	Medium
EgKw-18	Undated	Everquest	732767	5656310	High
EgKw-19	Undated	Hot Rocks	732729	5656253	High

10.3 Directions for Model Revision

Portions of the model can be revised in light of the survey results. Variables that can be modified include model assumptions, methodology, and the incorporation of new data sources. In terms of initial model assumptions, it is now apparent that site locations 500 m from water sources are excessive. In the initial model formulation, all but four of the known archaeological sites were located within the 100 m buffer from the nearest water source. The sites recorded in 2000 in the MbMF corroborate this pattern. New buffer distances will be examined for their applicability, including buffers at different intervals, such as 10, 25 and 50 m to a maximum distance of 250 m from the nearest water source. Field examination in the study area indicates that summer movement in the boreal forest is prohibitive unless on or near watercourses and/or lakeshores.

When the initial modeling methodology was used in the field, it became evident that the use of weighted map layers to determine a final “score” for site location potential was too elementary. Areas that were clearly inappropriate for occupation received scores of medium or even high potential.

Logistic regression, a multivariate modeling method that considers the effect of several independent variables (*i.e.* the environmental data) on the dependent variable (*i.e.* site location) (Parker 1985; Warren 1990), is proposed as an alternative methodology. The use of this expanded modeling methodology allows for a more accurate assessment of the environmental characteristics of site location and the construction of a model that represents the aggregation of those desired characteristics.

The five low potential sites demonstrate the need for the inclusion of cultural variables in the model. Land use for specialized or ceremonial activities is often dictated by an individual’s personal bias or worldview rather than by environmental factors. This aspect of the model can be refined through additional land use data beyond that already accumulated. The traditional land use study that is being compiled by the Hollow Water First Nation and sponsored by Manitoba Model Forest, will be reviewed for potential incorporation into the cultural portion of the model. Resource harvesting data, such as the fish model used in the CARP project (Dalla Bona 1994) will be incorporated to augment land use knowledge. Additional information, such as newly acquired soils data for the MbMF area, will also be incorporated into the model to examine relationships between these variables and archaeological site location.

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Appendix 1: Manitoba Heritage Permit A27-00



"Permit Side 1.pcx"



"Permit Side 2.pcx"

Appendix 2: Previously Recorded Sites in the MbMF Study Area.



Appendix 3: Analysis of Artifacts from EgKx-1 Wanipigow Lake Site



Appendix 4: Analysis of Artifacts from EgKx-19.

