Hakai Ancient Landscape Archaeology Project

Summary of Field Research Conducted in the April and May 2012

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Introduction

The following document provides a brief description of the results from our field research. Field research in April and May 2012 was conducted out of the Hakai Institute on Calvert Island. The major goals achieved during the course of this research included:

- Collecting palaeo-environmental sediment samples from pond basins and exposures
- Undertaking general inventory for archaeological sites on Calvert Island and nearby islets
- Revisiting and re-recording archaeological sites
- Revisiting two early Holocene archaeological sites to conduct test excavations: EkTb-9 (Triquet Island) and ElTa-18 (Kildidt Narros).

This research employed the use of three crews that worked independently to conduct palaeo-environmental and inventory tasks. During test excavation, the three crews worked together. Crew members included the following individuals: Duncan McLaren (University of Victoria), Elroy White (Heiltsuk), Johnny Johnson (Wuixinuxv), Jim Stafford (Coast Interior Archaeology), Joshua Vickers (Heiltsuk), Jenny Cohen (University of Victoria), John Maxwell (Ethos Archaeology), Andrea Walkus (Heiltsuk), Jordon Wilson (Heiltsuk), Julia Jackley (Simon Fraser University), Quentin Mackie (University of Victoria), and Daryl Fedje (Independent).

Palaeoenvironmental Research

A number of ponds and lakes on the northwest side of Calvert Island were selected for isolation lake basin coring. A total of six ponds were cored (Figure 1). Good quality samples were recovered from five of the six lakes.

Figure 1. Map showing locations of ponds and lakes cored in 2012 on Northwestern Calvert Island. Information is plotted on an orthophoto and employs TRIM contours.

Coring gear included two canoes, a plywood platform, a collapsible ladder, and 4" ABS pipe. Equipment was portaged to each pond or lake from the closest access point (Figure 2). The canoes were stabilized by tethering them to the shore in three locations. The plywood platform was then put across the gunwales of the two canoes forming a stable coring platform (Figure 3). The ABS pipe, fitted with a customized tin core catcher at the bottom, was lowered to the bottom of the lake and then driven into the sediments below by dropping the handle of a 10 lb. sledge hammer into the top end of the tube. If an extra section of ABS pipe was needed it was attached using a coupling and plumbers glue. All cores required a hand winch (come-a-long) attached the ladder for extraction.

Figure 2. Portaging gear to Lake on Calvert Island. Photo by Jude Isabella.

Figure 3. Using tethered canoes and platform to drive core in the middle of SBD Lake. Photo Jude Isabella.

All of the ponds and lakes cored were found to be no deeper than 1.5 m. The longest core extracted came from Pond 'D', at just under 5 m in length. Samples ranged in elevation from 2 to 86 m above sea level. The core from SBD Lake was sectioned in the field and reveals that the sediments collected span the immediate post-glacial period through until present (Figure 4). Sediments from the bottom of these lakes will be processed to enable the identification and quantification of plant pollen and diatoms through time. Through analysis of this data we will be able to determine changes in vegetation communities and relative sea level.

In addition to the lake cores, deposits of blue grey clay were noted along the shoreline of Safety Cove (eastern Calvert Island). These deposits were found to occur up to 60 m asl in a landslide scarp on the north side of the cove. Other clay deposits were also noted in the Kwakshua Channel area. These were noted to be underlying archaeological deposits at EjTa-T2 and EjTa-4. Clay deposits can be indicative of glacial-marine or glacial lacustrian environmental conditions. Samples were taken from two locations in safety cove and from EjTa-T2. These will be processed for diatom examination.

Figure 4. Core from SBC Lake showing transition from grey clay at bottom (glacial proximal sediments) to organic rich organic gyttja at the top. Photo by Jim Stafford.

Figure 5. Laminated clay deposits found in landslide scarp on north side of Safety Cove, Calvert Island. Photo by Johnny Johnson.

Archaeological Site Inventory and Mapping

Archaeological site inventory work was conducted primarily on Calvert Island and surrounding islets, although two new sites were inventoried in Kildidt Lagoon. Data collected during inventory work is still being compiled and mapped. Site inventory forms for each newly discovered site will be completed in the near future. Previously unrecorded archaeological sites were recorded in Kwashua Channel, Choked Passage, Blackney Island, Safety Cove, and Kildidt Lagoon. Areas were accessed by foot, canoe (Figure 6), and motorboat. Site discovery methods included using surface inspection of natural exposures, probes, augers, and shovels. In most instances, where sites were found, they were further inspected to determine the extent of deposits and/or features, and then mapped.

During the 2012 field season we tested new mapping equipment: Ashtech MobileMapper 100 devices. These are high precision GPS units that enable mapping using an infield GIS platform. Data mapped using these devices were found to be fairly precise for horizontal coordinates with accuracies around 0.5 m in intertidal areas and ranging from 2 to 5 m under canopies (without post-processing). Vertical data were not very accurate with consistent error margins of up to 8 m in elevation, even when using averaging over time. Having GIS abilities in the field was very useful for mapping horizontal data point; however, the units are a little bug ridden and prone to crashing. Regardless, site data was successfully gathered and mapping of this information is well on the way (Figure 7).

Site types and features recorded during inventory include shell middens, culturally modified trees, pictographs, petroglyphs, canoe runs, fish traps, clam gardens, intertidal artifact scatters, and wet site deposits. All intertidal artifacts were flagged, mapped, and collected. The majority of the objects found are chipped stone tools (Figure 8). Some ground stone and one sea mammal bone object was also found (Figure 9).

Evaluative subsurface testing was undertaken at one newly inventoried site EjTa-T2 (Figure 7). Subsurface testing was undertaken at this site as artifacts found in the adjacent intertidal zone have stylistic affinities with early tool assemblages found on other parts of the Northwest Coast. In particular, the general lack of ground-stone objects and the presence of a co-laterally flaked and lanceolate-shaped projectile point (Figure 10). Grey clay was found to underlie the archaeological deposits tested (Figure 11).

Figure 6. Conducting archaeological inventory in Kwakshua Channel facilitated by canoe transport.

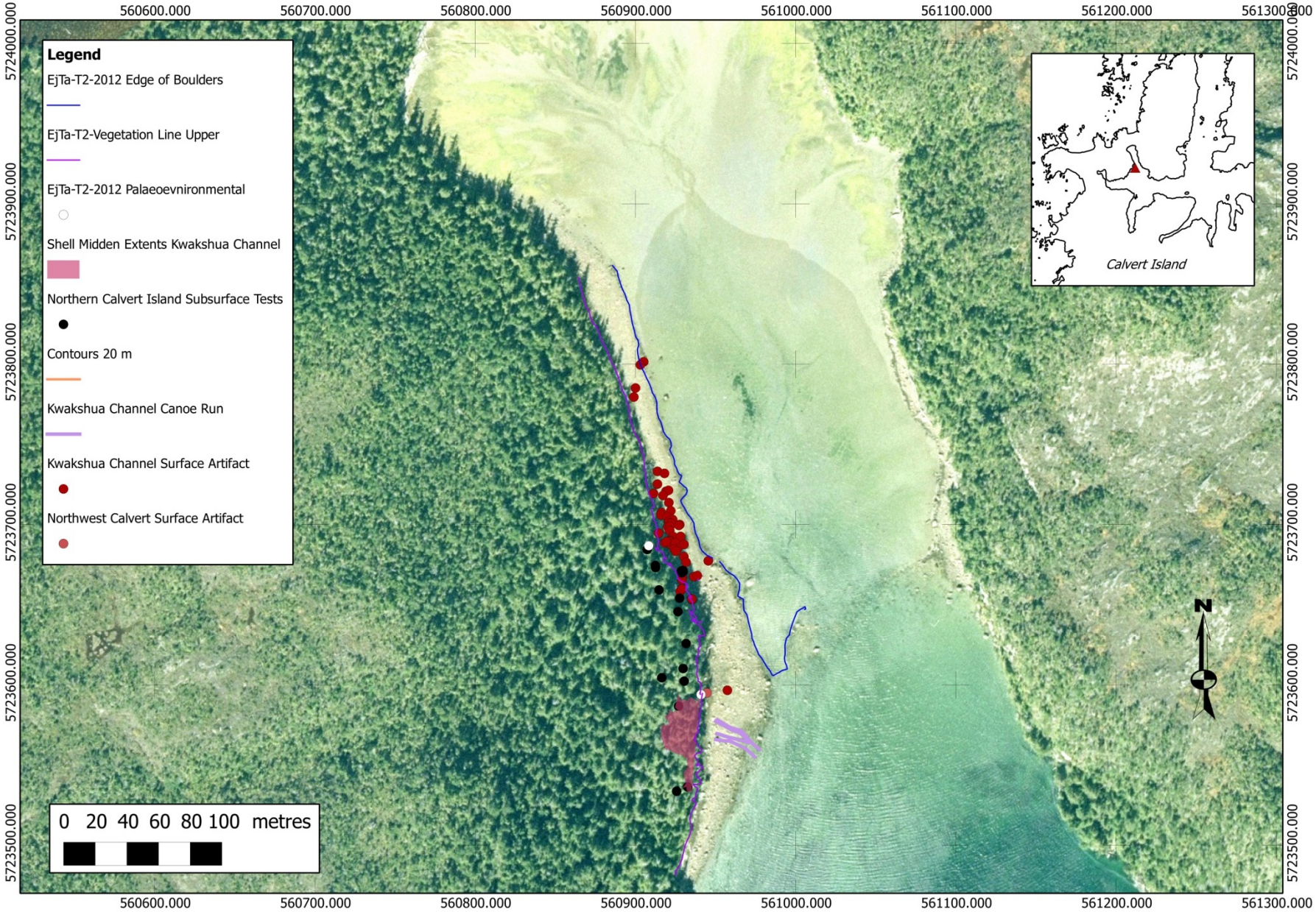

Figure 7. Map showing data points collected at newly inventoried archaeological site EjTa-T2. Data is plotted on an orthophoto demonstrating the horizontal precision of the hand held Ashtech MobileMapper 100 device.

Figure 8. Surface collected biface fragment from EjTa-13. Photo by Duncan McLaren.

Figure 9. Surface collected sea mammal bone spindle whorl from EjTa-T1. Photo by Jenny Cohen.

Figure 10. Co-laterally finished project point from EjTa-T2.

Figure 11. Profile of intertidal evaluative test at EjTa-T2 showing grey clay below cultural bearing deposits.

Site Revisits

Previously recorded archaeological sites were revisited in Kildidt Lagoon, McMullen Island, Gosling Island, Triquet Island, Kwakshua Channel, and Fish Egg Inlet. Subsurface ESP testing was conducted at FaTc-19 (McMullen Group). Excavation units were excavated at ElTa-18 (Kildidt Narrows) and EkTb-9 (Triquet Island) (see the next section for more details). Intertidal lithics were collected at ElTa-8 and ElTa-18 (Kildidt Lagoon/Narrows), FaTc-19 (McMullen Island), ElTc-5 (Gosling Island), EjTa-2, EjTa-13, and EjSx-4 (Kwakshua Channel), and EjSw-18 (Fish Egg Inlet). Site form updates and detailed reporting on all activities undertaken at these sites is currently being undertaken.

Test Excavations

Based on results from coring, augering, and radiocarbon dating in 2011, and work by other researchers (Cannon 1997, 1999), three archaeological sites with early-Holocene archaeological deposits were selected for test excavations in 2012: EkTb-9 (Triquet Island), ElTa-18 (Kildidt Narrows), and ElSx-4 (King Island). During field work we cut this to two sites, EkTb-9 and ElTa-18, due to logistical constraints and an over ambitious field schedule. We hope to return to ElSx-4 in 2013. At both sites, test units were excavated in 5 cm levels by trowel and shovel. Sediments were removed and water screened through 3 mm mesh.

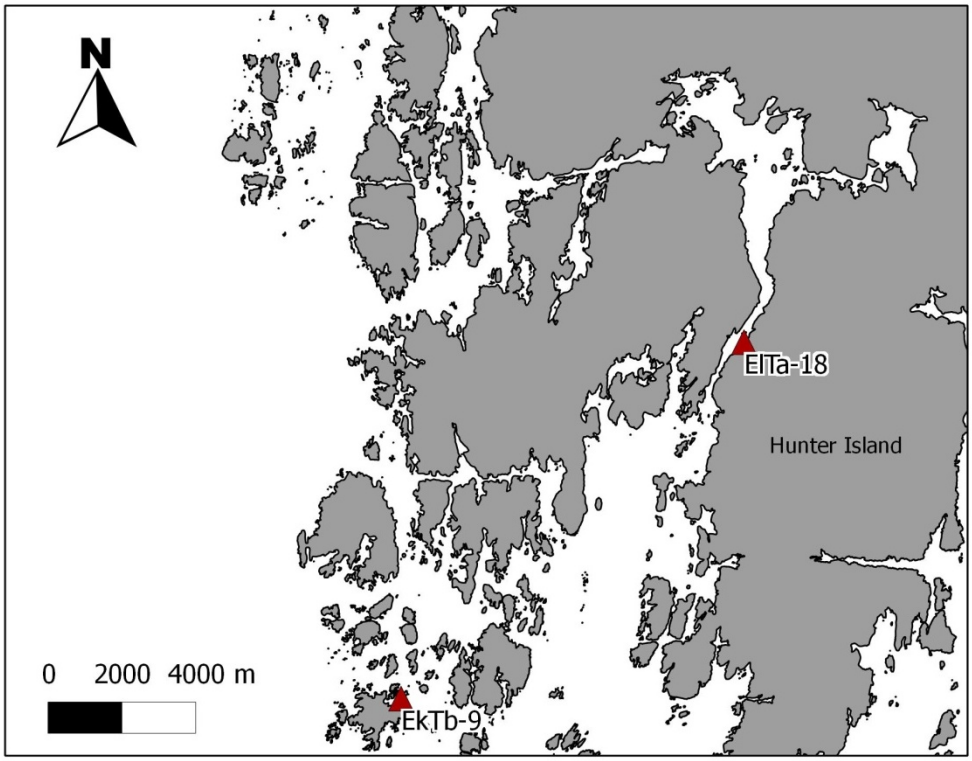

Figure 12. Locations of ElTa-18 (Kildidt Narrows) and EkTb-9 (Triquet Island) where 1 x 1 m evaluative tests were conducted in 2012.

Kildidt Narrows (ElTa-18)

During ESP coring at ElTa-18 (Kildidt Narrows), Cannon (1997, 1999) found charcoal rich deposits at the base of the archaeological site dating to 11,400 calendar years before present. His sample from the ESP core was extremely small (2 cm diameter). We decided to place a 1 x 1 m evaluative test in the same location as where Cannon recovered this small sample to determine if these results could be replicated and to collect a larger sample of materials.

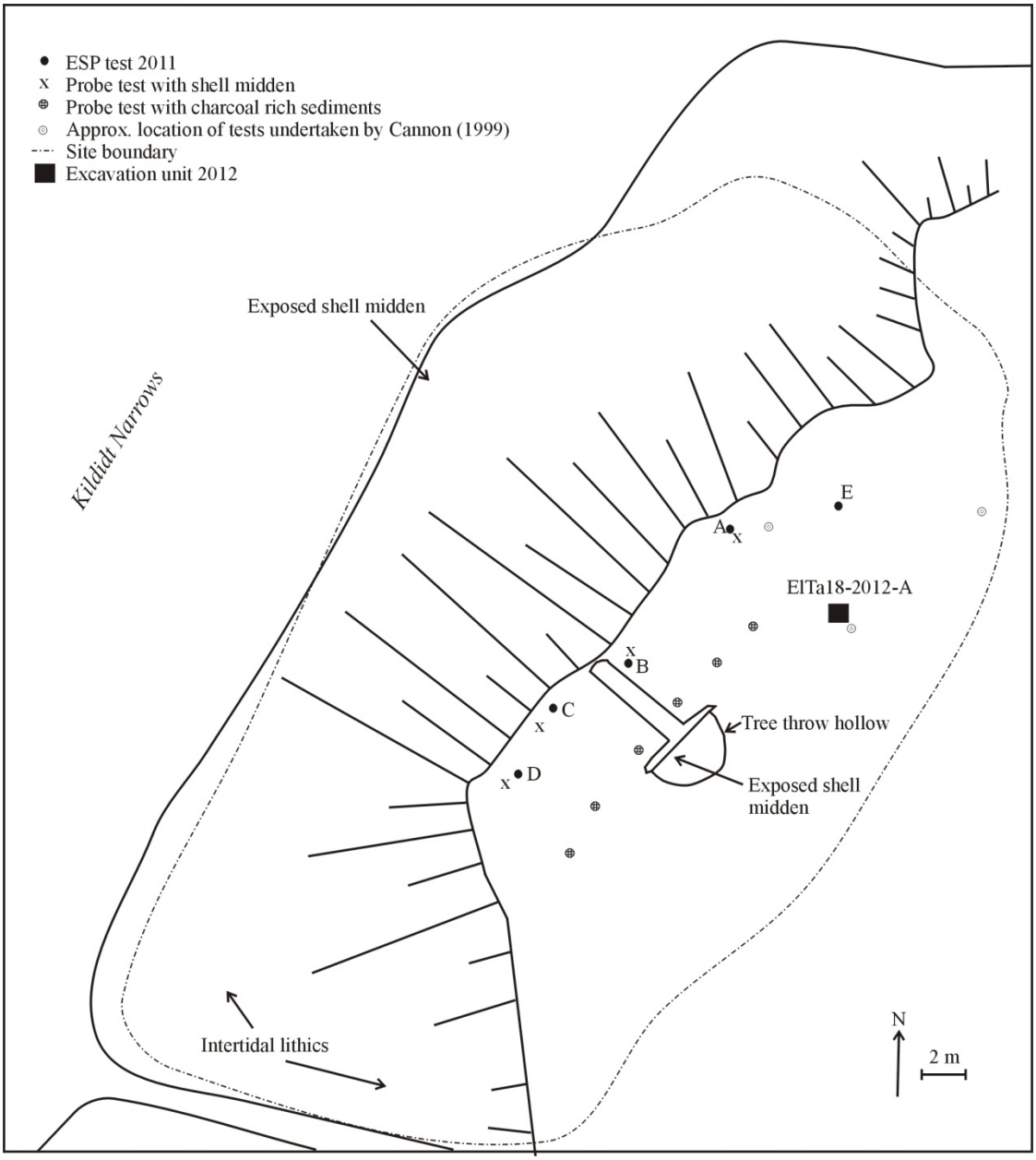

Figure 13. Map of ElTa-18, Kildidt Narrows Site. Showing location of test excavation unit.

Excavation of the 1 x 1 m unit was difficult as deposits are close to 2.4 m deep. Shoring was employed after a depth of 1.25 m to ensure the safety of those working in the unit (Figure 14). Stratigraphy of the site includes three distinct charcoal rich layers all of which were found to have associated cultural material (Figure 15). Shell is absent in the sediments so bone preservation was limited to a few calcined fragments. Although the sediments are saturated and water needed to be continuously pumped from the unit during excavation, preserved wood was not encountered. The results of these excavations confirm that there is a charcoal rich cultural layer in the bottom organic sediments (Stratum II - Figure 15). Two small chert lithics were found in association with the basal-most charcoal rich layer, the tip of a biface and a fragment of a retouched flake. A sample of charcoal from this Stratum has been submitting for radiocarbon dating. Obsidian flakes were found in the two upper charcoal rich strata (IV and VI).

Figure 14. Elroy White at bottom of excavation unit ElTa-18-A-2012. Costumized shoring was employed to help stabilize walls of the excavation unit. Photo by Duncan McLaren.

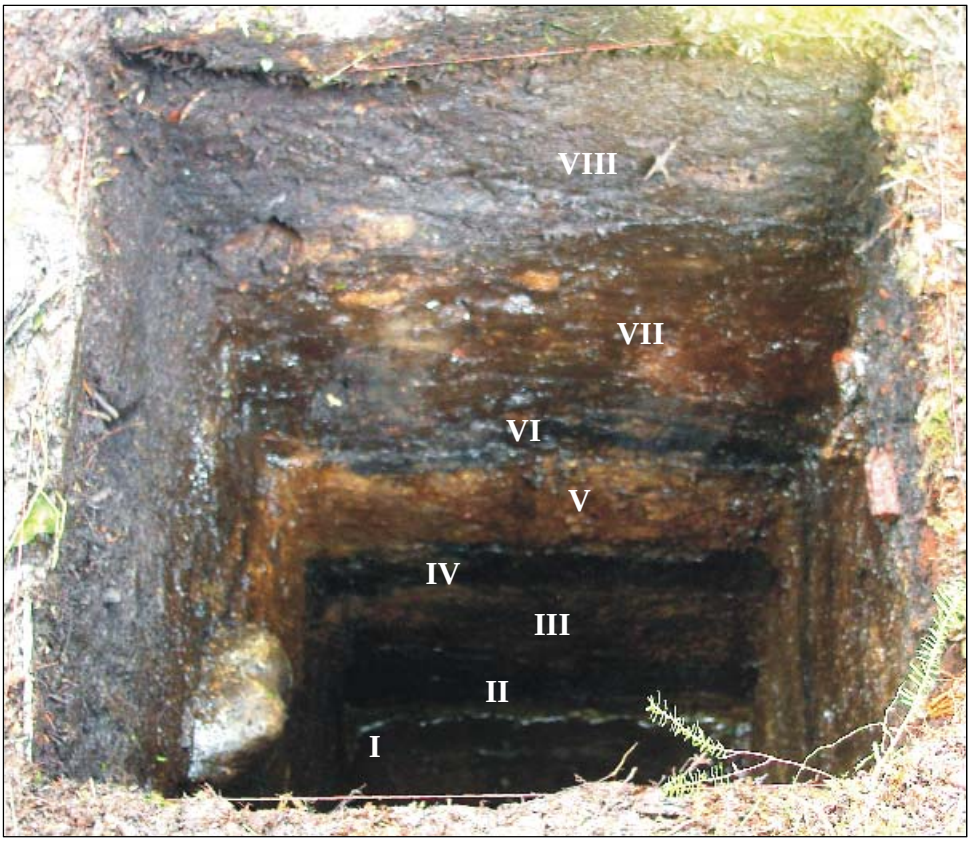

Figure 15. Profile of 1x1 m excavation unit showing eight distinct strata. I – grey silty sand with granite pebbles (obscured by water in bottom of unit); II – dark brown charcoal rich silt (cultural layer); III – brown/grey silt with granite pebbles; IV – black charcoal rich silt (cultural layer); V – orange brown peaty silt with granite pebbles and cobbles; VI – black charcoal rich silt; VII – brown silt with pebbles and cobbles; VIII – loose humic soil.

Triquet Island (EkTb-9)

A single 1 x 1 m test excavation unit was excavated at EkTb-9 on Triquet Island (Figure 16). This site was first recorded in 2008 (Stafford et al. 2009) and through core and auger testing undertaken in 2011 was determined to have shell midden deposits up to 5 m deep. Some deposits were found to extend 70 m inland from the current shoreline. These inland deposits are less deep (~2.5 m) and radiocarbon samples revealed that early Holocene deposits (7080 calendar years before present) underlay the shell midden. The location of the test excavation was chosen based on auger testing which revealed peat underlying the shell midden. The peat suggested the possibility that preserved organics might be encountered during excavation.

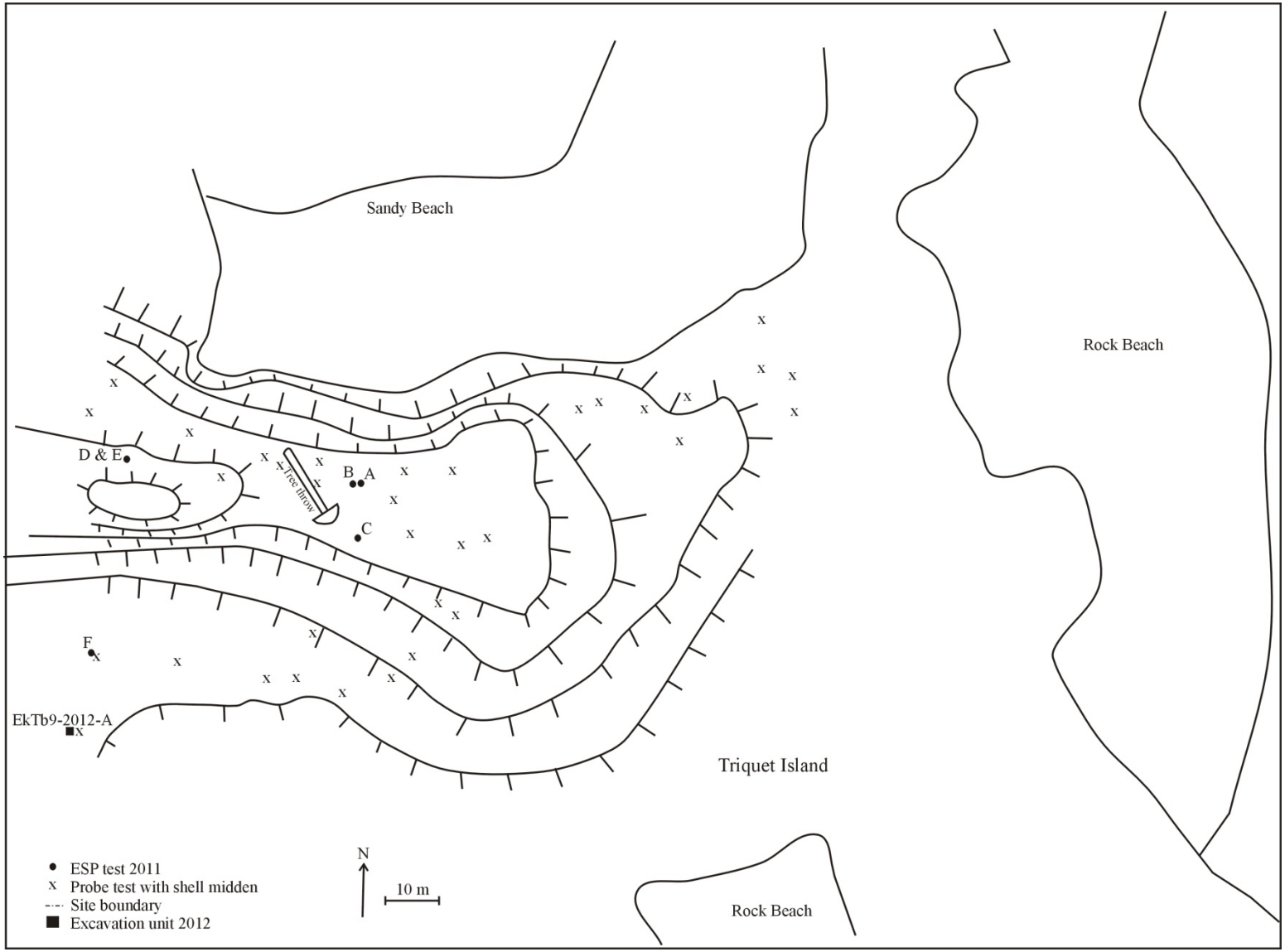

Figure 16. Map of EkTb-9 showing location of excavation unit.

The 1 x 1 m test unit was excavated to a depth of 235 cm dbd (Figure 17 and Figure 18). Most of the archaeological materials encountered were found in association with the shell midden deposits and in three black and charcoal rich layers (strata II, V, and IV). Preserved wood was found in strata underlying the shell midden with the exception of the basal-most layer (I). Much of the wood discovered had no evidence of cultural modification. However, a few objects are clearly artifacts. These objects include a carved wooden ball (Figure 19), a carved wooden object, possibly part of compound fish hook (Figure 21), and a large mat needle (Figure 20). Plant macrofossils found in association with the net needle appear to be some type of bulrush or tule. Non-wooden objects encountered include fire cracked rock, bone, and obsidian and quartz crystal debitage. Cultural material was found to lie directly upon the lowest stratum (I).

Figure 17. Andrea Walkus excavates unit at EkTb-9 Trinquet Island. Photo by Duncan McLaren.

Figure 18. Stratigraphic profile from EkTb9-2012-A with brown peat layer below shell midden. I – course brown/grey sand; II – black charcoal rich sand; III – grey silt with decaying granite, IV – brown peat; V – black charcoal rich peat; VI – shell midden; VII – black charcoal rich silt; VIII – yellow/brown silty clay; IX – humus. Most cultural material was found in association with strata II, III, V, VI, and VII. Photo by John Maxwell.

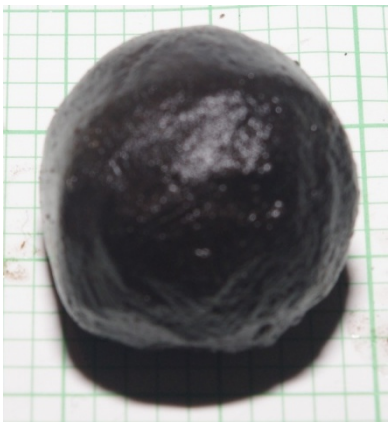

Figure 19. Carved wooden ball from excavations at EkTb-9-2012-A (Triquet Island). Photo by Duncan McLaren.

Figure 21. Carved wooden object, possibly the lower arm of a arm of a compound halibut hook. From unit EkTb-9-2012-A. Photo by Duncan McLaren.

Figure 20. Wooden mat or net needle from excavation unit EkTb-9-2012-A. Object has been carved so that it is beveled on both lateral edged. This object was found in association with preserved grass (possibly dune grass) and may have been used to weave this material.

Analysis and Reporting

All samples and notes have been taken to the University of Victoria, Department of Anthropology, Archaeology Lab for cataloguing and analysis. Four preliminary radiocarbon date samples from excavations at EjTa-T2, ElTa-18, and EkTb-9 have been sent to the W. M. Keck Carbon Cycle Accelerator Mass Spectrometry Laboratory. All artifacts collected are in the process of being catalogued and photographed. Special curatorial techniques are being researched in order to stabilize the wooden objects collected. For the time being these are being stored in water in a dark refrigerator. Analytical and reporting tasks that will be undertaken in the upcoming weeks and months include: processing sediment samples from pond cores and archaeological excavations, more radiocarbon date sampling, diatom slide processing and analysis, pollen slide processing and analysis, mapping, and submitting completed site inventory forms. A full and detailed report on the activities undertaken in 2012 is expected in March of 2013. A report of archaeological work conducted in 2011 will be completed in September 2012. I anticipate that at least one article for publication will be drafted this coming winter as well.

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