Archaeological Investigations at Kivalekh (Okak 1; HjCl-01), Northern Labrador, July-August 2018

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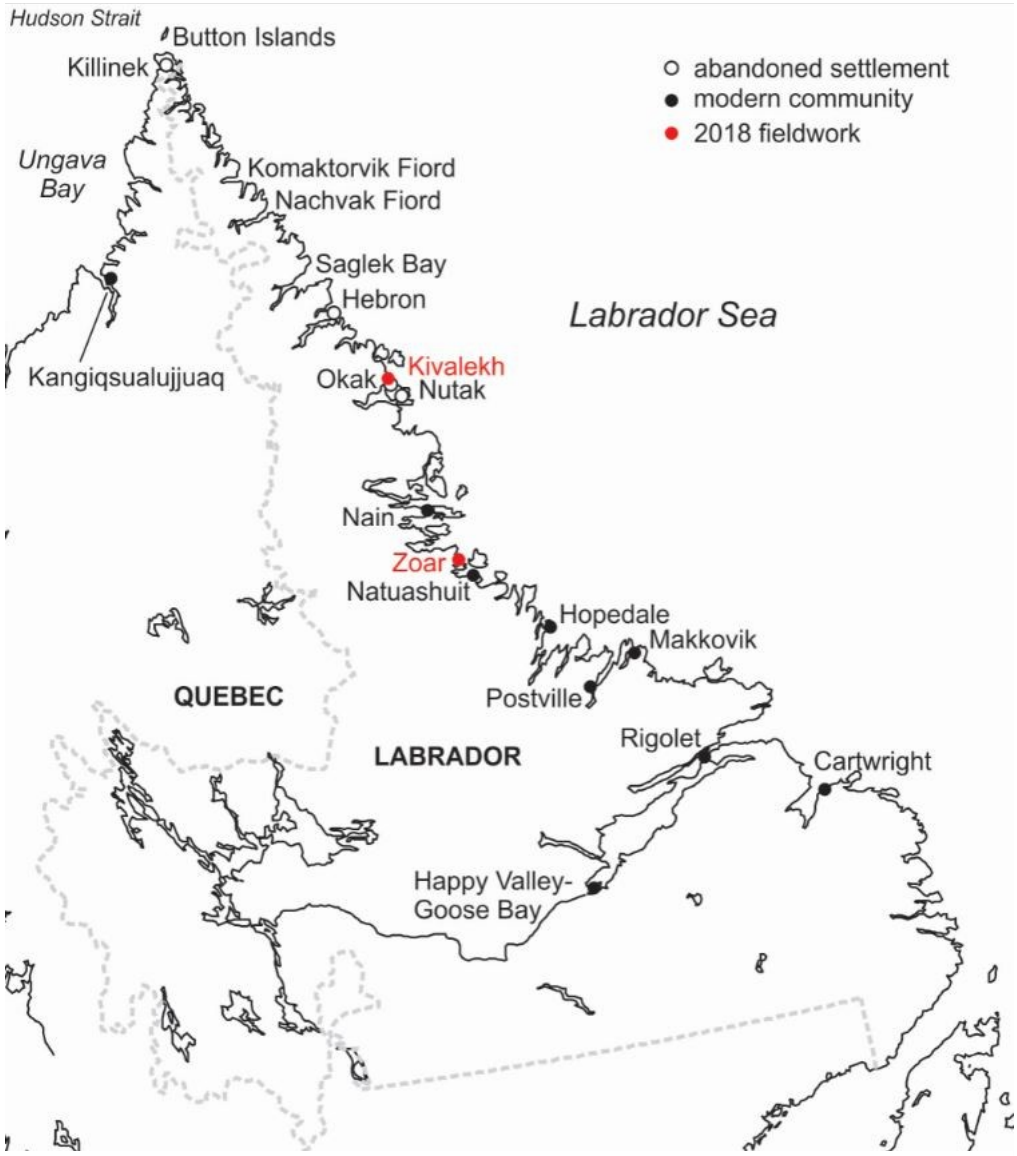


Figure 1: Map of Labrador showing 2018 fieldwork locations.

Between July 19 and August 6 a Memorial University team conducted reconnaissance survey, mapping and test excavation in and around the precontact and historic Inuit winter village of Kivalekh (Okak 1; HjCl-01), 2 km northwest of the historic community of Okak (Okak Mission; HjCl-10) (Figures 1 and 2), as well as brief aerial mapping at the nineteenth century Inuit-Moravian mission settlement of Zoar (HaCi-01). The principal goal of fieldwork in 2018 was to produce a detailed aerial document of Kivalekh and its surroundings, as a complement to a separate project planned for the Okak Mission site; existing site maps for Kivalekh recognizably deviate from the distribution of features on the ground when superimposed on Google Earth satellite imagery. The traditional community of Kivalekh is reported to be the largest Inuit winter settlement in Labrador, consisting of about 49 semisubterranean sod house structures ranging in size from 15 m^2 to 70 m^2 (i.e., from small single-family dwellings to multi-family "communal" dwellings). Although it was the subject of repeated archaeological testing over the course of a decade, from 1974 to 1984 (e.g. Cox 1977; Sutton et al. 1981; Kaplan 1984), and has been periodically revisited since (e.g. Curtis 2006), it is not well-described in the literature, an accurate map of the features and archaeological activities does not exist, and images of the Inuit finds have not been published.

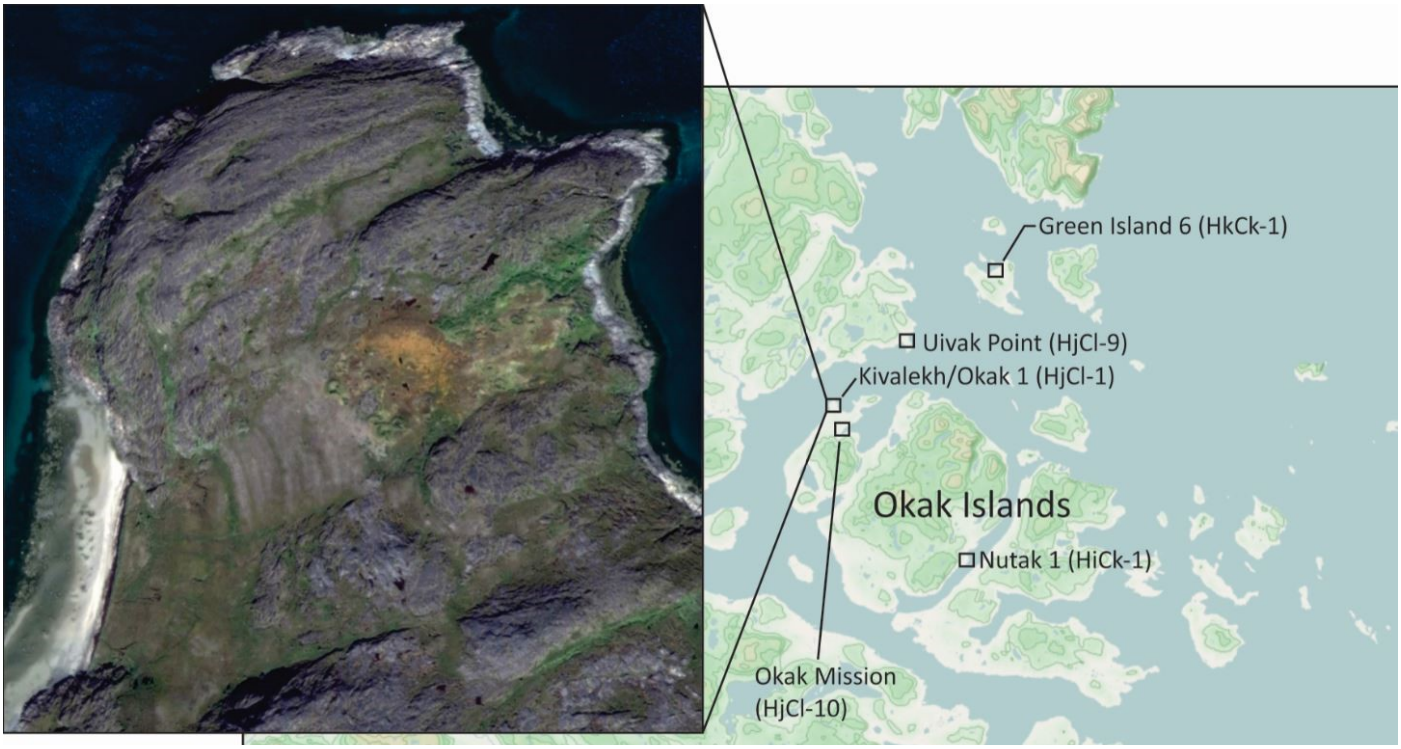


Figure 2: Map of important Inuit sites in the Okak region (Google Earth inset of Kivalekh).

Figure 3: Area of nineteenth century Inuit cabins at eastern end of Zoar, looking north.

Figure 4: RPAS image of eastern end of Zoar.

The goals of 2018 fieldwork were fourfold: 1) to produce an accurate topographic map of the site using a compact RTK system; 2) to generate aerial imagery with a drone or RPAS (remotely piloted aerial system) suitable for producing a photomosaic and 3D model of the area and of particularly significant features; 3) to conduct ground reconnaissance of the site vicinity to record other sites and features; and 4) to conduct limited testing of selected midden areas to generate datable organic materials and better characterize the chronology of site occupation. This was aimed at generating an accurate surficial record of the site that could be used to guide future activity there, such as further archaeological investigation, tourism and other site visitations (which can be expected to be relatively frequent, given the significance of the nearby mission site to Labrador Inuit). Given the general threat to coastal sites from sea level rise, such a document would also allow the monitoring (hence mitigation) of erosion at the site's seaward edge. It is hoped that orthophoto mosaics like the one created in 2018 will be periodically re-generated in future to precisely monitor erosion and degradation.

The crew consisted of Peter Whitridge, James Williamson, Francois Levasseur, Susan Hay, Jonathan Lidd and Lianna Rice. Whitridge, Williamson, Levasseur and Rice flew to Nain on July 19, and met up with Susan Hay. While waiting for the delayed arrival of equipment and supplies shipped from St. John's the team tested the RPAS's around Nain, and secured permission form the PAO to conduct a trial survey at the abandoned Inuit/Moravian community of Zoar. With logistical support from Ches and Joe Webb we travelled to Zoar on July 21 and conducted mapping flights with a DJI Phantom 3 Professional (Figures 3 and 4). Before leaving for the field Lianna Rice was

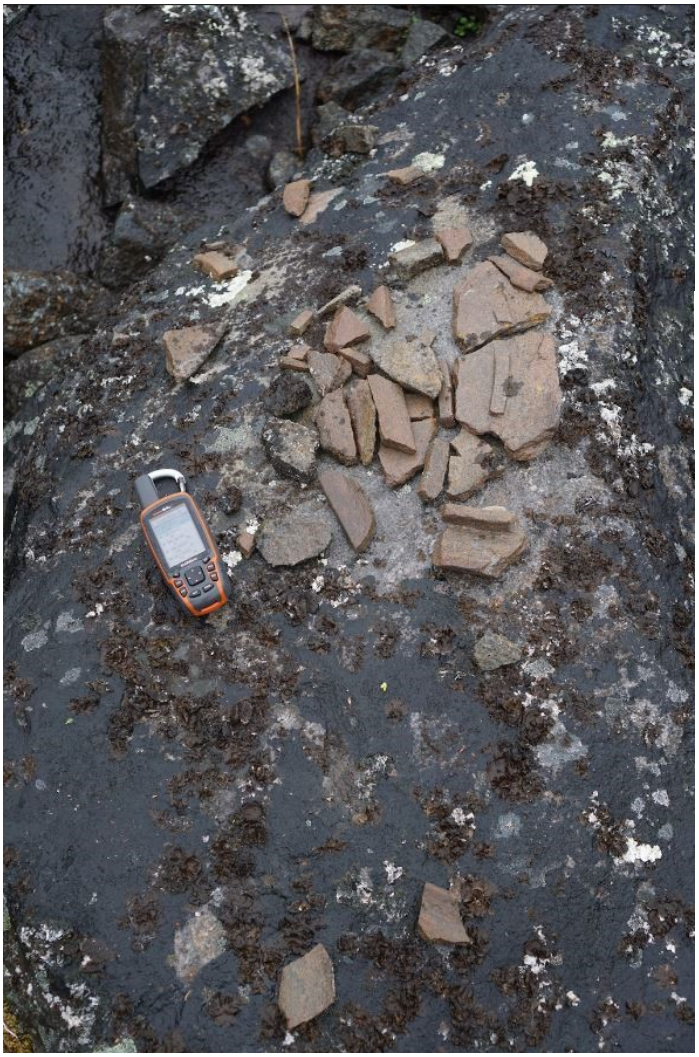


Figure 5: Disturbed, fragmented soapstone lamp on surface north of Kivalekh.

Figure 6: Jonathan Lidd, James Williamson and Susan Hay recording inuksuk with Emlid.

Figure 7: Large sod houses at western end of Kivalekh.

forced to withdraw from the crew due to illness, and Jonathan Lidd was hired in her place. On July 25 the crew travelled with Willie Fox aboard his longliner to Okak. We were dropped on the west side of the beach pass on which Kivalekh is situated and established our camp just a few tens of metres from the site. Over the next two weeks the crew conducted foot survey of the region surrounding Kivalekh, especially the northern portion of the peninsula on which it sits, opened test pits next to the entrance tunnels of two semisubterranean sod houses, and conducted numerous mapping flights of Kivalekh and the northern peninsula. On August 5, the crew was picked up by Richard Pamak and Henry Lyall and returned to Nain. On August 7 a public open house was held in the Nain Community Government building to explain our activities at Kivalekh, and the crew returned to St. John's on August 8.

The beach pass on which Kivalekh was situated and adjacent parts of a small peninsula at the northwestern tip of Okak Islands were visually inspected by the crew and by RPAS from the air. Archaeological features, consisting of tent rings, boulder caches, cairns, burial cairns, and sod house depressions, and stray artifacts (Figure 5) in the survey area were recorded at one or more points using an Emlid RTK-GPS (Figure 6) and handheld GPS (Garmin GPSMAP64S). Besides the dense grouping of sod houses on the eastern half of the beach pass (i.e., Kivalekh itself; Figure 7), there was a modest scatter of historic or recent caches and tent rings at the northern end of the peninsula. As well as occasional inuksuit and simple cairns at prominent locations (Figure 8), there was a dense concentration of burial cairns on the eastern side, just north of the sod houses. The latter were likely created during the occupation of Kivalekh, and included two conglomerate features that appear to represent multiple simultaneous interments. Two sod houses were selected for small midden tests, including a large elevated structure at the northeasternmost edge of the house group, tested with a 0.5 m x 1.5 m trench south of the mouth of

Figure 8: Simple cairn on hill north of Kivalekh.

Figure 9: Jonathan and Susan excavating midden test at northeast corner of Kivalekh.

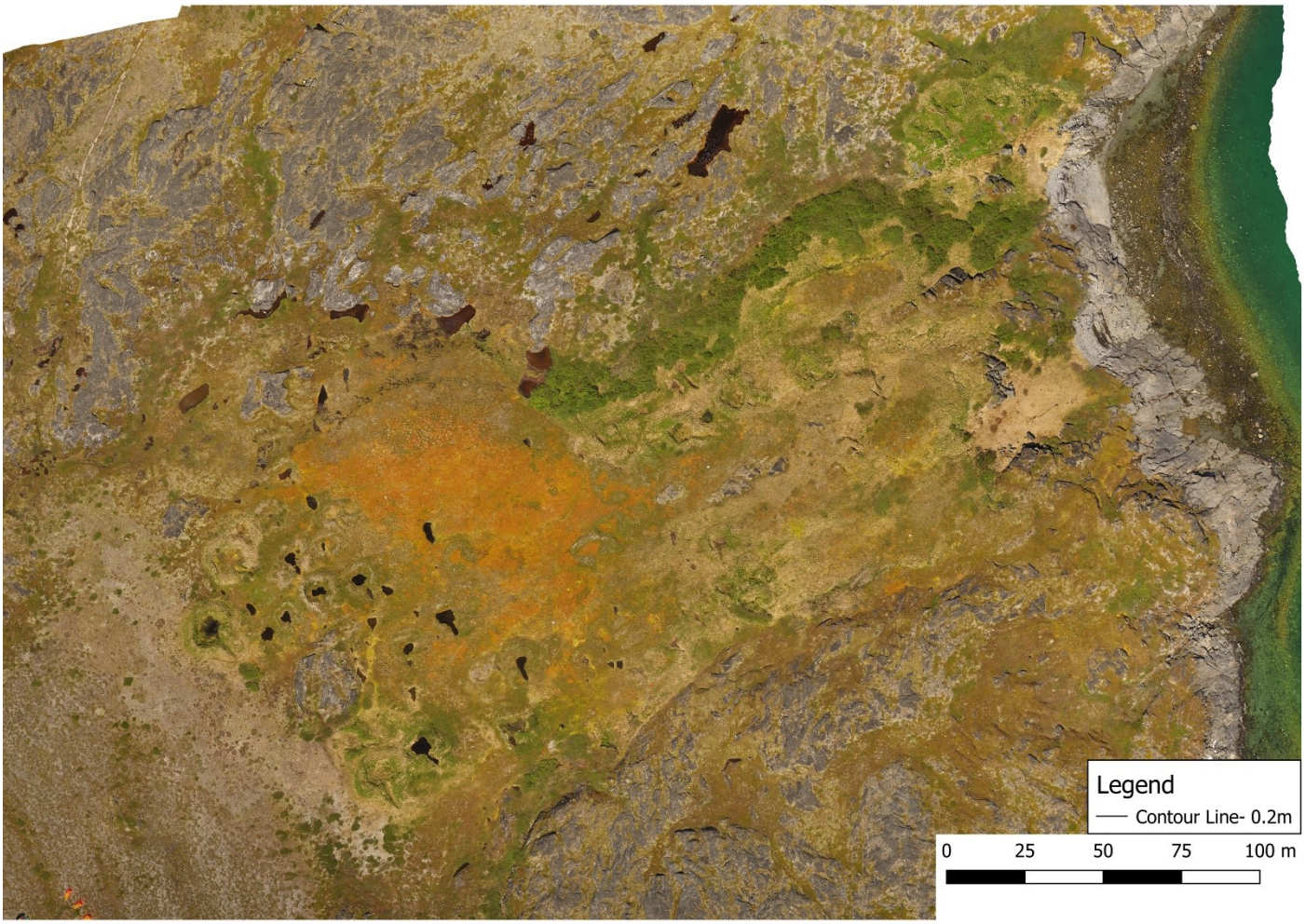
Figure 10: Francois Levasseur testing presumed midden area next to shallow sod house at Kivalekh.

the entrance tunnel (Figure 9), and a small, low relief structure in the swampy terrain at the centre of the site tested with two 0.5 m x 0.5 m units north of the entrance tunnel (Figure 10). Besides a nail and three pieces of glass, the modest artifact assemblage from the trench was dominated by Inuit (ground slate, nephrite, soapstone and whale bone) and pre-Inuit (knapped chert and quartz crystal) materials. There was some preservation of organic materials (wood, bone and baleen) in the upper levels, but none in the levels that produced the bulk of the pre-Inuit artifacts. The tests of the small house produced only several slabs of baleen and some poorly preserved bone. Several thousand aerial images were generated from multiple overflights of the winter village and the northern peninsula (Figure 11), allowing the creation of high-resolution orthophoto mosaics, three dimensional models and contour maps (Figures 12-14). Selected features were documented at a higher level of detail with hand held digital photographs and low-level RPAS flights.

The primary outcome of the 2018 season was a successful field test of a new RPAS (DJI Matrice 200) and of various approaches to producing useful aerial imagery, and generation of a substantial digital data archive that will be valuable for future monitoring of site integrity at Kivalekh. Attempts to correlate the current imagery with mapping and testing there in the 1970s and 1980s is ongoing, but it is hoped that a spatial record of these important early fieldwork episodes will be integrated into the new site maps and photomosaics. The limited testing in 2018 adds only a little to our knowledge of past occupations of the site, but the recovery of well-preserved baleen from what appeared to be an early feature raises the prospect of contributing to the genetic analyses of past bowhead stocks that have become increasingly commonplace in recent years (e.g., Alter et al. 2012).

Figure 11: James and Francois generating test RPAS imagery outside Nain.

Figure 12: Detail of orthophoto mosaic of Kivalekh locale generated from RPAS imagery (courtesy of James Williamson).



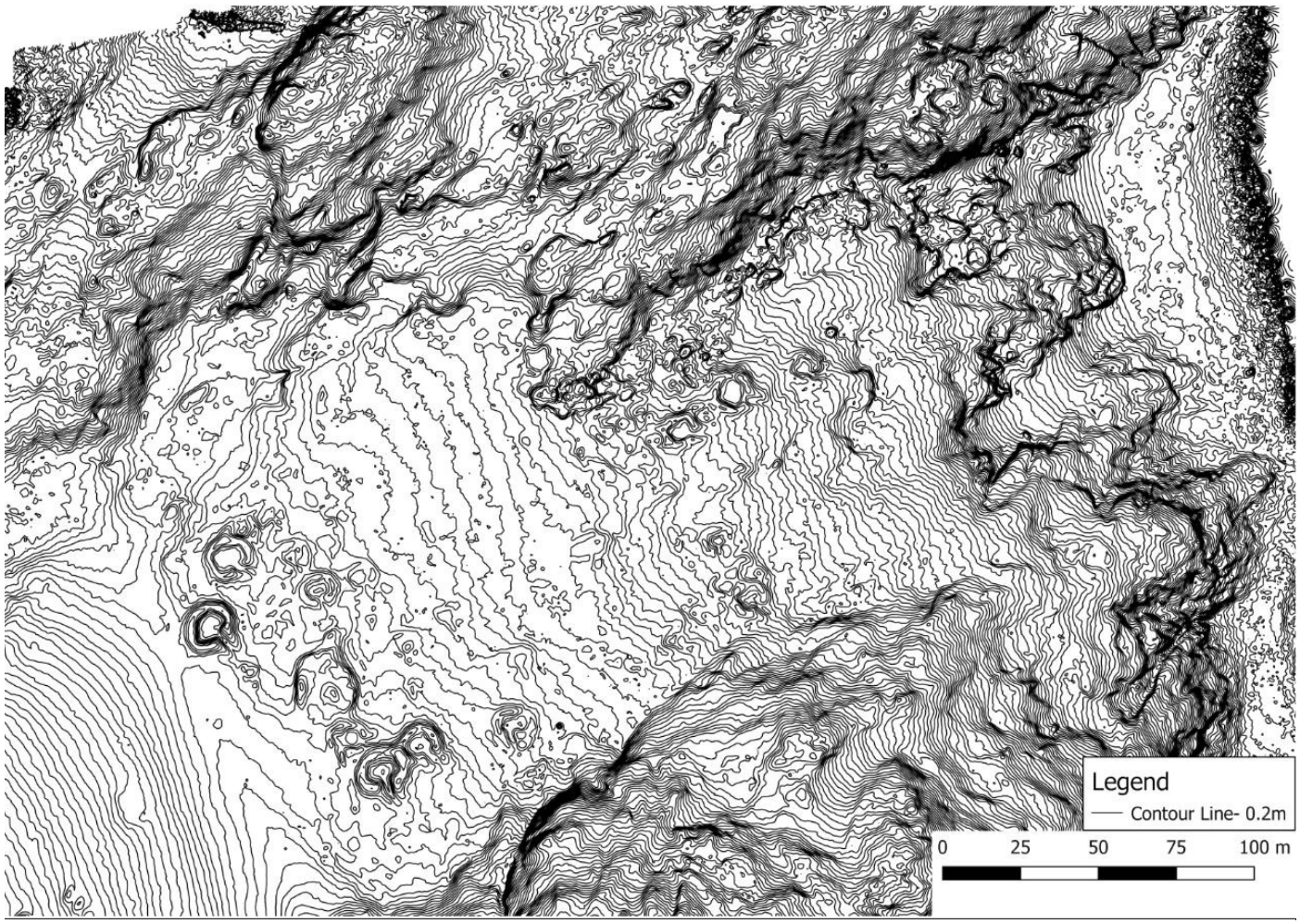


Figure 13: Contour map of Kivalekh generated in QGIS (courtesy of James Williamson).

Acknowledgements

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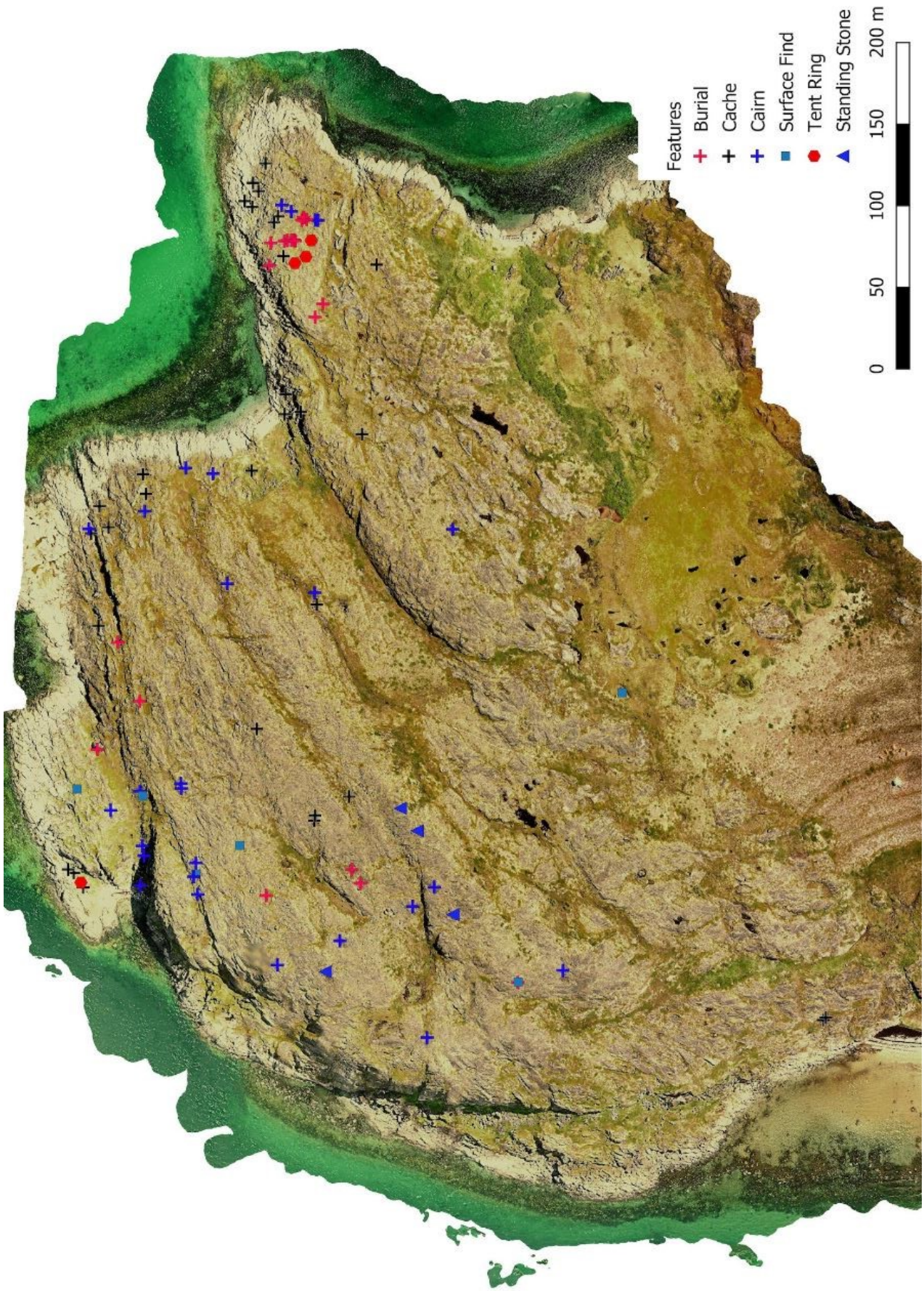

Figure 14: Archaeological features north of winter houses at Kivalekh (courtesy of James Williamson).

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