



Creating a Digital Landscape

A Collaborative Project for Open Source Learning

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The Simon Fraser University Museum of Archaeology and Ethnology (SFU MAE) in partnership with Treaty 8 Tribal Association (T8TA) and the Tse’K’wa Heritage Society (THS) at the Charlie Lake Cave site, has begun an innovative digitization and educational project. This project will create a digital landscape for open source learning to be used by the THS, Treaty 8 First Nations (T8FNs) and the Aboriginal Education Centre (AEC) in School District No. 59 for education and research related programs in the Peace River Region of northeastern BC.

This collaboration is a continuation of a long standing relationship between SFU, T8TA and THS.

In 1974, Knut Fladmark, professor emeritus, excavated at Charlie Lake Cave (CLC) with subsequent excavations in the 1980s, and again in the 1990s by Dr. Jon Driver, now vice-president academic and provost of SFU. Their research into the ice-free corridor hypothesis of the original peopling of North America helped establish the pre-contact use of the CLC by the indigenous peoples. On May 29, 2012, the First Nations of Doig River, Prophet River, and West Moberly, purchased the land containing CLC. Their intention is to reclaim and repatriate this land and use it once again as part of T8FNs’ cultural heritage – as an active, and interactive landscape.

Over sixty years ago, a young Len Donaldson began his passion of collecting lithic artifacts as he worked the soil of his nearby farm. Yet Donaldson, now a retiree, knew this collection did not belong to him. Donaldson turned to his friend Arthur Hadland, farmer and former director of Area C in the Peace River region, for advice.

Above: Rudy Reimer demonstrating pXRF.
Photo Credit: Mandy Nilson



Top Left: Barbara Winter and Arthur Hadland.
Photo Credit: Mandy Nilson



Top Right: Jon Driver discussing the features of a lithic from the TseGÇÖKGÇÖwa Collection with Karen Aird and Len Donaldson.
Photo Credit: Mandy Nilson



Right: Tiinesha Begaye, ARCH 349-5 student, examining lithics.
Photo Credit: Mandy Nilson

In turn, Hadland contacted Barbara Winter, director of SFU MAE. Winter accepted the collection from Donaldson on the stipulation it would be returned to the Indigenous owners in the Peace River Region. In the spring 2015 semester, Winter's museum collections class, ARCH 349-5, spent several hundred hours sorting, numbering, cataloguing, photographing, and packing what would become the well prepared and documented Tse'K'wa Collection. Karen Aird, the cultural heritage advisor for T8TA and the THS, gave a presentation to ARCH 349-5 about the proposed Tse'K'wa Interpretive Centre and the significance of the Charlie Lake Cave site to Treaty 8 First Nations. Jon Driver and others explained the significance of the site to the students.

This collection of over 1000 artifacts will be returned to THS, to be housed at the planned Tse'K'wa Interpretive Centre. Tse'K'wa, or the "Rock House" in Dane-zaa language, refers to the Charlie Lake Cave site and the larger cultural landscape (or land) in and around Charlie Lake which was used by the Dane-zaa people for thousands of years and

continues to be an important part of their seasonal activities.

During the collections review process, students gained valuable hands-on experience that translates to highly applicable field skills. This includes learning about what a surface scatter would look like, the types of lithics that were manufactured, and materials used for stone tool construction in the region. The SFU archaeology program provides an opportunity for students to learn from experienced researchers. During the lithic sorting phase, there was over 200 years of combined archaeological experience from archaeologists and academics who supervised the students. One of these was Rudy Reimer, an assistant professor in the department of archaeology, who performed x-ray fluorescence (XRF) on some of the stone tools.

XRF is a non-destructive technique that uses low-level radiation to reveal an object's elemental fingerprint.

Below: Left to right: Denee Renouf, Kristen McLaughlin, Barbara Winter, Mandy Nilson.
Photo Credit: Robyn Ewing



XRF is an inexpensive way to allow for live time viewing of results, giving students an opportunity to see how the testing is performed. For more information on this technique, see the *What is X-Ray fluorescence?* exhibit in SFU MAE co-curated by Robyn Ewing, heritage consultant, and Rudy Reimer. In the Tse'K'wa case, XRF was used on obsidian tools, which showed the tools were made from stone originally quarried near Mount Edziza, a volcano in northwest BC several hundred kilometers from Tse'K'wa. This indicates networks and trade routes that existed across northern BC in ancient times.

The Tse'K'wa Collection is now central to a project that will create a digital landscape through open source learning. It is anticipated that this digital landscape will provide online resources for students, educators, heritage workers, and First Nations throughout BC. Moreover, this collaborative project between SFU MAE, T8TA and THS recognizes the value of primary resources in First Nations historical and archaeological research and interpretation. Its objective is to repurpose original digital assets, including two web sites from the original 1993 SFU MAE website, and combine them with a new online exhibit of the Tse'K'wa Collection. The digital assets that are being repurposed are the *Charlie Lake Cave* webpage, written by John Breffitt in 1993, and the award winning *A Journey to a Newland* website originally created by the SFU MAE as part of an investment from the Virtual Museum of Canada in 1995 and edited in 2005.

To integrate these two repurposed digital assets and develop a new online exhibit of the Tse'K'wa Collection, SFU MAE, through several of its Research Assistants (RAs), is developing education modules and 3D learning kits. These 3D learning kits will contain several 3D-printed artifacts that will be correlated with artifacts in the online exhibit, as well as an intended physical exhibit at the

planned Tse'K'wa Interpretive Centre. SFU MAE is creating these online education modules using readily available and accessible technology provided by SFU. Education modules will consist of a game for various school grades that will take the students through the repurposed websites, and the new online exhibit. Accompanying these education modules will be teacher resources that will also be used with the 3D learning kits.

The SFU MAE website will host the digital portion of the kits making them freely and publicly accessible provincially and nationally.

As such, this digital landscape being created in conjunction with T8TA and THS will be accessible in rural northeastern BC school districts and Indigenous communities.

SFU embraces and promotes far reaching community engagement through research and education. The SFU MAE is actively cultivating this strategic vision through its collaborative partnership with T8TA and THS that will result in an open source learning resource, as well as 3D learning kits. Resource sheets for this digital landscape will allow teachers, heritage workers, researchers, and First Nations to optimize the resources on the SFU MAE website. A more tangible, and fun, experiential learning experience will be given to students through the 3D kits. These kits will be housed with the Tse'K'wa Heritage Society in Fort St. John, under the direction of Karen Aird.

Prior to the completion of the Tse'K'wa Interpretive Centre, the Tse'K'wa Collection will be housed at the Dinosaur Discovery Gallery, Tumbler Ridge Museum Foundation. There is a positive pre-existing relationship between T8TA, the THS and the

Dinosaur Discovery Gallery under the ownership of the Tumbler Ridge Museum Foundation. Upon the collections' return, there will be a small exhibit of the Tse'K'wa collection on public view at the Dinosaur Discovery Gallery until it can be housed more permanently at the interpretive centre.

It is the intention of the THS to cultivate positive relationships with community neighbours.

One of the ways positive relationships can be cultivated is to invite school groups to the Tse'K'wa for day trips. Of note, although the landscape around Tse'K'wa may have been impacted and excavated,

it remains strongly connected to the narrative and stories of Indigenous people today. By understanding the history and prehistory of the Tse'K'wa area, more positive and proactive relationships can be formed by all communities in the Peace River region. People may leave the physical landscape, but still freely explore the digital landscape based on Charlie Lake Cave and the Tse'K'wa Collection, as provided by SFU MAE.

While on the surface this is a collaborative project to repurpose digital assets, create an online exhibit, 3D learning kits, and form a new digital landscape, it is more far-reaching. It has helped equip SFU archaeology students to work in northeastern BC at a time of gas and oil development, industrialization, and a proposed dam project. It will provide a consistent resource for long term use by students, educators, researchers, heritage workers, and First Nations in an under-represented area of northeastern BC. The digital landscape will bridge geographic obstacles for remote communities. It is this important connection with T8TA and the THS that has allowed this project to progress in a responsible and respectful manner. Lastly, it is the hope of our partnership that similar positive and considerate behaviours will be demonstrated by everyone accessing Charlie Lake Cave physically or digitally.

Dr. Barbara Winter, Director of the Simon Fraser University Museum of Archaeology and Ethnology, leads a team of Research Associates including Mandy Nilson, Kristen McLaughlin, Denee Renouf and Sandi McKinney, who have a strong background in archaeology and cultural resource management. Karen Aird is the cultural heritage advisor for the Treaty 8 Tribal Association and the Tse'K'wa Heritage Society.

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