Ad Hoc Technical Support Group for the BC Network of Lead Communities Investigating Missing Children from Residential Schools

Chair: David Schaepe

A DRAFT summary of GPR analysis for communities, by Andrew Martindale, UBC.

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The use of GPR is often mentioned as a way of locating missing children. This document outlines what GPR is, how it can be used, and how it is used in ground searches. Note that although this is a powerful tool, not all missing children will likely be located, even with GPR.

What is GPR?

Ground-penetrating radar is one of a group of technologies that can map the contents of the ground remotely and without digging. GPR sends out radio waves and records their reflections, often using a push-cart system. Like navigational radar, GPR distinguishes difference in the reflections. While burials have characteristic reflections and can often be located with GPR, it is more difficult where the background is complex, or the burial is small.

What Role Can It Play in Identifying Missing Children?

Many survivors, their families, and communities have knowledge of where missing children are buried. Some archives also contain similar information. GPR can be used when ground searches are conducted. GPR works best when the radar signal is collected carefully – this means that the ground must be clear of debris or plants, and the GPR results are collected intensively, usually at intersecting 25 cm lines in grids. The result is a dense pattern of reflected radio waves that allows us to identify places of difference, sometimes called “anomalies” or “targets”. Burials have some characteristic traits in GPR, but researchers are still working out what all of these are and if they change in different landscapes. GPR mostly captures the reflections of the grave shaft rather than its contents.

GPR is sometimes used to scan places where there is no information of burials. GPR is usually used with other information, such as survivor knowledge, information from archives, or within known cemeteries. GPR takes time to conduct and needs special training for both ground searching and interpretation. Courses for Indigenous communities to build this capacity are being developed. GPR technology is also changing and new tools, such as GPR from drones, will likely be available in the coming years.

GPR works as one step in a complex path toward missing children. This path includes supports for survivors, ceremony for communities, and the collection of information about missing children. GPR is not the only scanning tool for ground searches, and only works when ancestors are in burials. Because GPR is a tool for locating missing children, it needs to work with mapping systems such as **GIS**.

What Are the Challenges of GPR Analysis?

All three main parts of GPR (ground searches, interpretation, mapping) require specialized training and benefit from experience working to locate burials. GPR only works is some kinds of landscapes and conditions. The interpretation of a burial in GPR is complex and builds out of experience. GPR cannot locate children who do not have a burial. Our understanding of this tool improves if we share information between communities, but this can be difficult.

This document is one of a series that the British Columbia Technical Working Group on Missing Children and Unmarked Burials has created to help those involved in ground searches for missing children

The BC Technical Working Group includes: Dave Schaepe (chair), Anne Atleo, Sarah Beaulieu , Remy Benoit, Kathleen Bertrand, Cara Bendzy, Hugo Cardoso, Lisa Davidson, Shannon Enns , Colin Green, Erica Kay, Amber Kostuchenko, Hudson Kunicky, Kim Lawson, Andrew Martindale, David McAtackney, Ivy Peers, Whitney Spearing, Nick Weber, Vicky White, Brian Whiting, Ashley Whitworth, Megan Whonnock.

Kisha Supernant assisted with the content of these documents.