

Ground-penetrating radar reveals potential mass grave sites from the Holocaust in Lithuania

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Researchers recently used ground penetrating radar to locate an unmarked, potential mass grave site in Lithuania, according to a new

study that will be presented at The Geological Society of America's 2018 Annual Meeting in Indianapolis, Indiana, on Sunday, 4 November. The work aims to amass evidence that points to the likely locations of mass graves from the Holocaust and, in time, award federal distinction to the areas in the form of memorials.

"The larger context," says physical geographer Harry Jol from the University of Wisconsin–Eau Claire, "is that, within the [holocaust](#) in Lithuania, every small and large town has a mass gravesite."

Though many potential mass grave and execution sites are peppered throughout Lithuania, only eyewitness accounts, with some accounts conflicting, are the first lines of evidence to guide researchers to approximate locations. In some areas, roughly 5–10 and upwards to 2,000 individuals lie buried, while other locations have upwards of ten times that number.

By using ground-penetrating radar, researchers like Jol can narrow the search by peering below the surface and searching for signs that indicate human-caused disturbances. Jol and his colleagues have located mass grave and execution sites in other areas throughout Lithuania and Israel, though this particular study pertains to the Rokiškis region.

"We're basically able to slice into the ground the same way the oil and gas industry does and build a three-dimensional model of the near subsurface," Jol says, explaining that breaks in the subsurface, as well as rectangular or circular patterns, can be interpreted as digging. "When those breaks occur, and with some of the patterns we see, that indicates that something has cut through those glacial-fluvial sediments."

Indeed, [radar images](#) revealed such signs in the Rokiškis region, indicating a potential grave site roughly two meters below the surface. Under Jewish burial traditions, which detail practices for honoring the

dead, the remains of Jewish persons, once buried, must not be disturbed.

Ground penetrating radar images are just one line of evidence that teams of researchers use to establish exact locations of these sites. Historical and eyewitness accounts, as well as aerial photographs taken by Nazi pilots form other lines of evidence used to determine likely coordinates.

Little is known about the roughly 28 victims of the execution and burial site in Jol's study. They likely hailed from a nearby village, he says, and were sought out when Nazi soldiers reviewed public records of local families. Farmers were then often ordered to dig a grave that could hold the number of victims they had identified through those records.

"The Nazis then went to the Jewish population and said, 'we're going to move you to another location where you can join other Jews, take three days of supplies with you.' Then, as they were walking out to the train or depot, they were shuttled off into the forest, executed and buried in a pit."

Once gathered, the various lines of geoscience evidence are passed through local museums, archaeologists, and eventually political offices before the site can be awarded federal distinction. Signs of a once-strong Jewish population preceding the second world war, like city streets named after synagogues, are now sparking interest in younger generations, Jol says.

"Recently a play written about these types of mass executions in the region received a national award," he says. "And there's a building recognition now where some of the youth are asking, 'is this part of our history?'" Other creative [works](#), like documentaries and exploration of poetry from the time, are prompting further reflection on the Holocaust's shadow in Lithuania.

More information: Ground Penetrating Radar Imaging of the Trakas Holocaust Mass Grave, Lithuania. [gsa.confex.com/gsa/2018AM/webp
... ram/Paper324710.html](http://gsa.confex.com/gsa/2018AM/webpaper/Paper324710.html)

Provided by Geological Society of America

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