



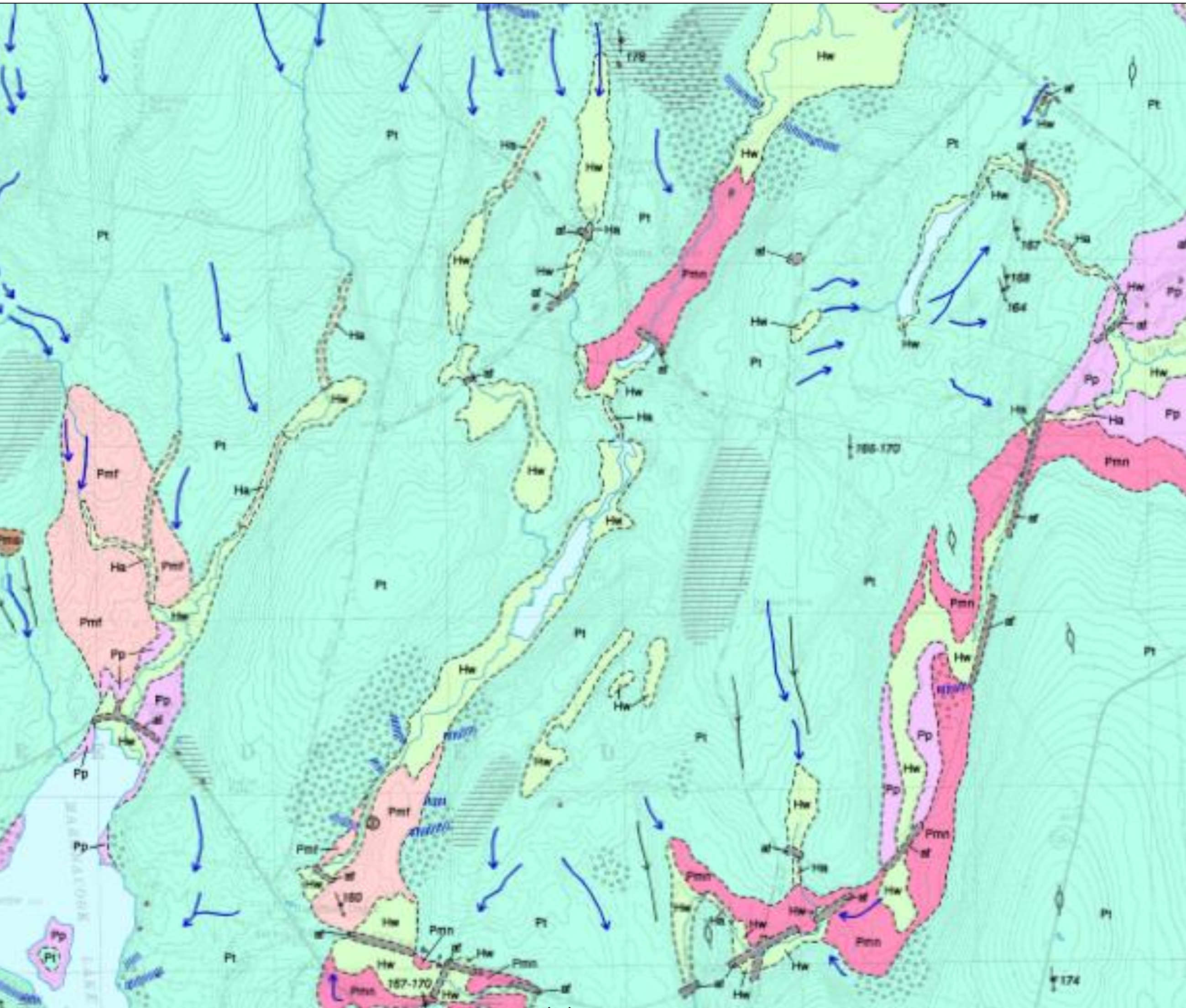
A Dry Path Through the Wetlands

Exploring a Possible Esker Connected to the Readfield Marine Fans

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What We Know

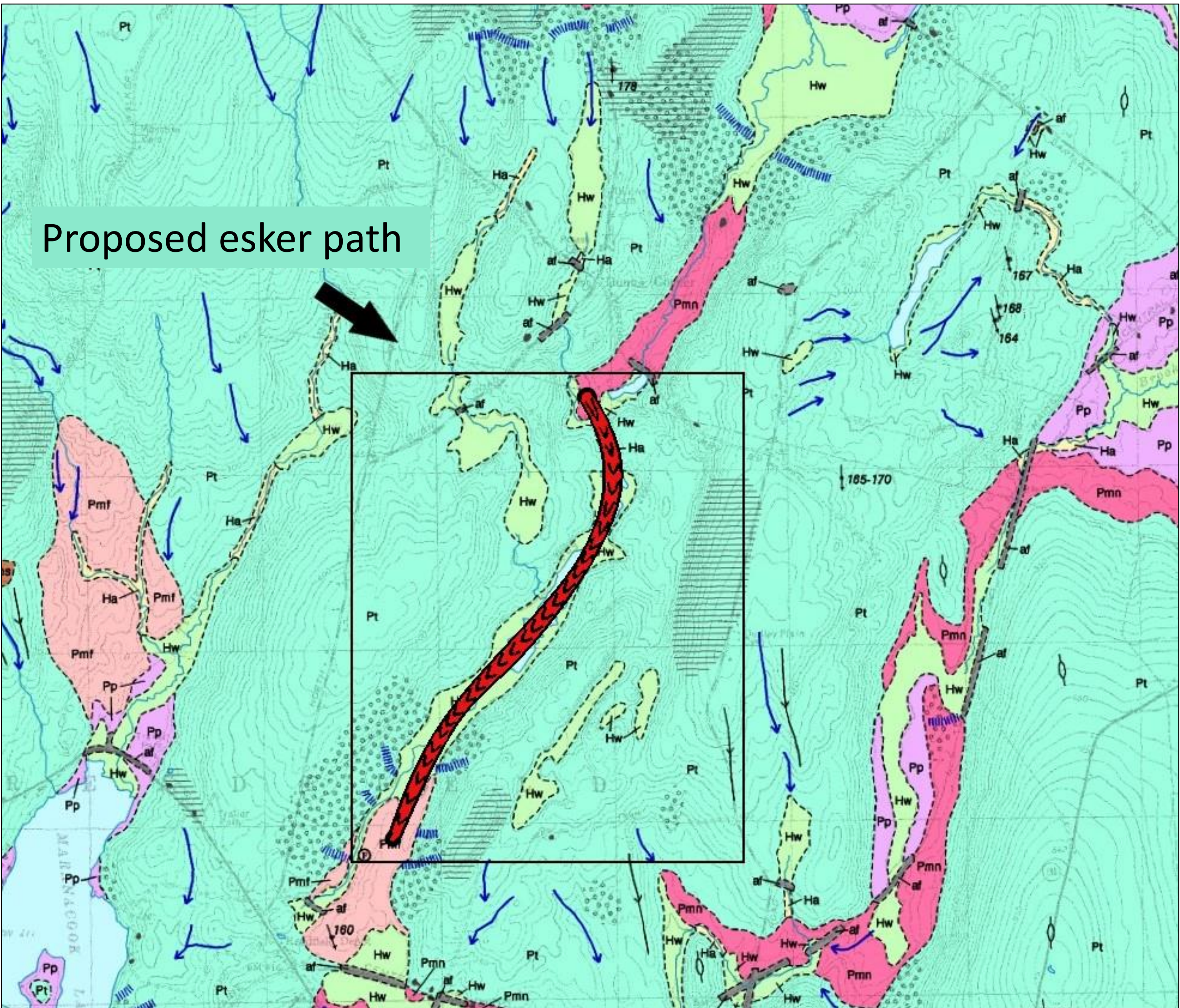
The present-day landscape that we see before us in Maine was sculpted and embossed by a series of glacial events. These events left evidence for us all around the state. The evidence paints a clear picture, but there are still many fine details to be finished. We know that the last ice age ended somewhere close to 10,000 years ago. We can see the ridges of moraine from where the glaciers stopped seasonally on their retreat north. This feature provides us with data that helps distinguish the orientation of the glaciers during retreat. Eskers, often referred to as horsebacks, are a high ridge of sorted sediments left by melt water tunnels inside and underneath the glaciers. In Maine, these eskers often end up terminating at a marine fan. Marine fans, often called deltas, are scattered throughout the state. They indicate where meltwater and the ice would have been in contact with the ocean creating a delta, most of them are adjacent to the upper marine limit. The upper marine limit shows us the maximum distance the ocean was able to reach underneath the last ice sheet. The ocean was able to reach underneath the ice sheet and on to the continent because the weigh of the ice sheet at its maximum had pushed the earths crust down in elevation. But the rate of the ice sheet melting was faster than the rebound of the crust, resulting in the submergence of a large area and the edge of the glacier floating on the ocean. This explains why we have evidence of shorelines and related surficial geology so far upland from the coast in Maine.



(1)

Image Key

1. Maine Geological Survey Surficial Quad Map of Readfield Area site
2. Maine Geological Survey Surficial Quad (with overlay)
3. (GPR) Ground Penetrating Radar Images
4. Maine Geological Survey LiDAR Map of Valley
5. Northern Section (A) of possible esker
6. Maine Geological Survey LiDAR Map of north section
7. Google earth screenshot of field area
8. Northern Section (B) of possible esker
9. Maine Geological Survey Bedrock Quad Map of Readfield Area
10. LiDAR Map showing where GPR was collected
11. Possible Esker section (marked by square on Image 10)
12. Glacially formed Landform in Readfield (possible ancient estuarial area or braided stream?)



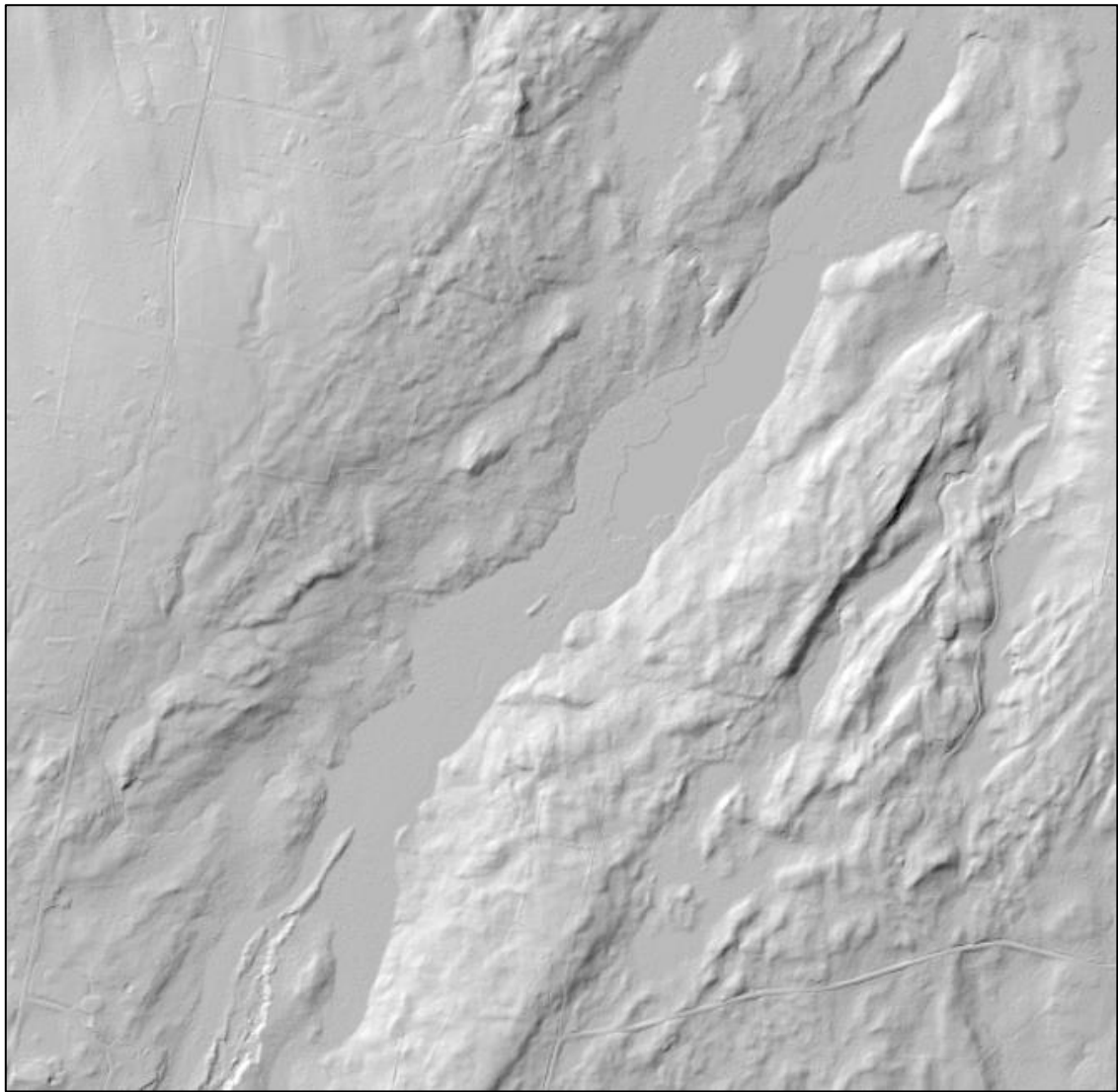
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Introduction

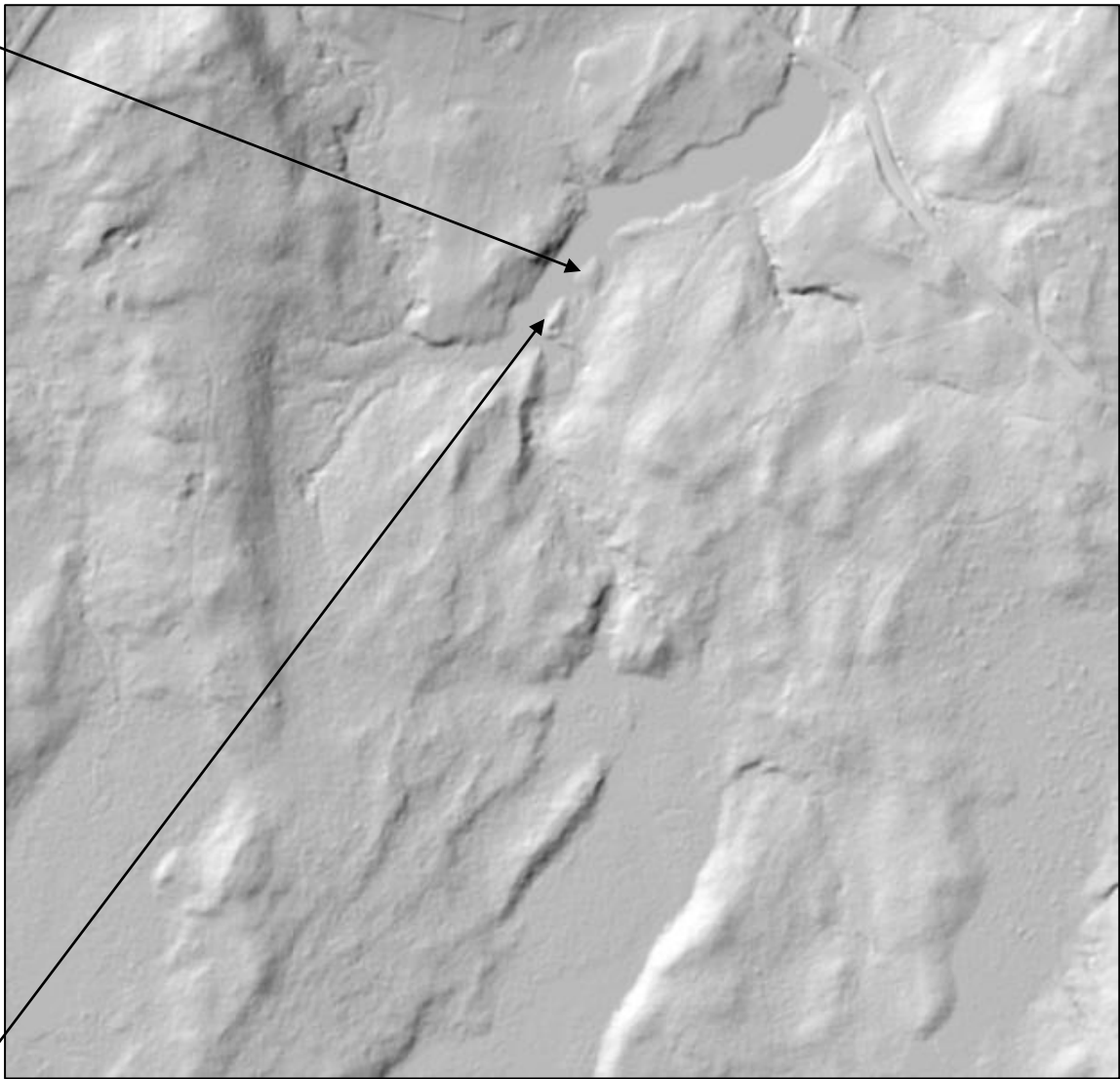
In Readfield Maine you can find many examples of evidence that was left behind by the most recently retreated ice sheet. From striations in the bedrock, moraine ridges (recessional), marine fans, braided stream remnants, eskers and more. This poster will be focusing on the possibility of an esker that leads to an already documented marine fan. This fan is located on the north side of Route 17 near the old Readfield Depot Train Station and currently an active sand pit. Using GPR (Ground Penetrating Radar), just up the valley north from the sand pit we collected data between the termination of the trail/structure (Labeled by a Triangle) and what I believe to be an exposed crest/continuation of that same structure (Labeled by a Square) in image (10).



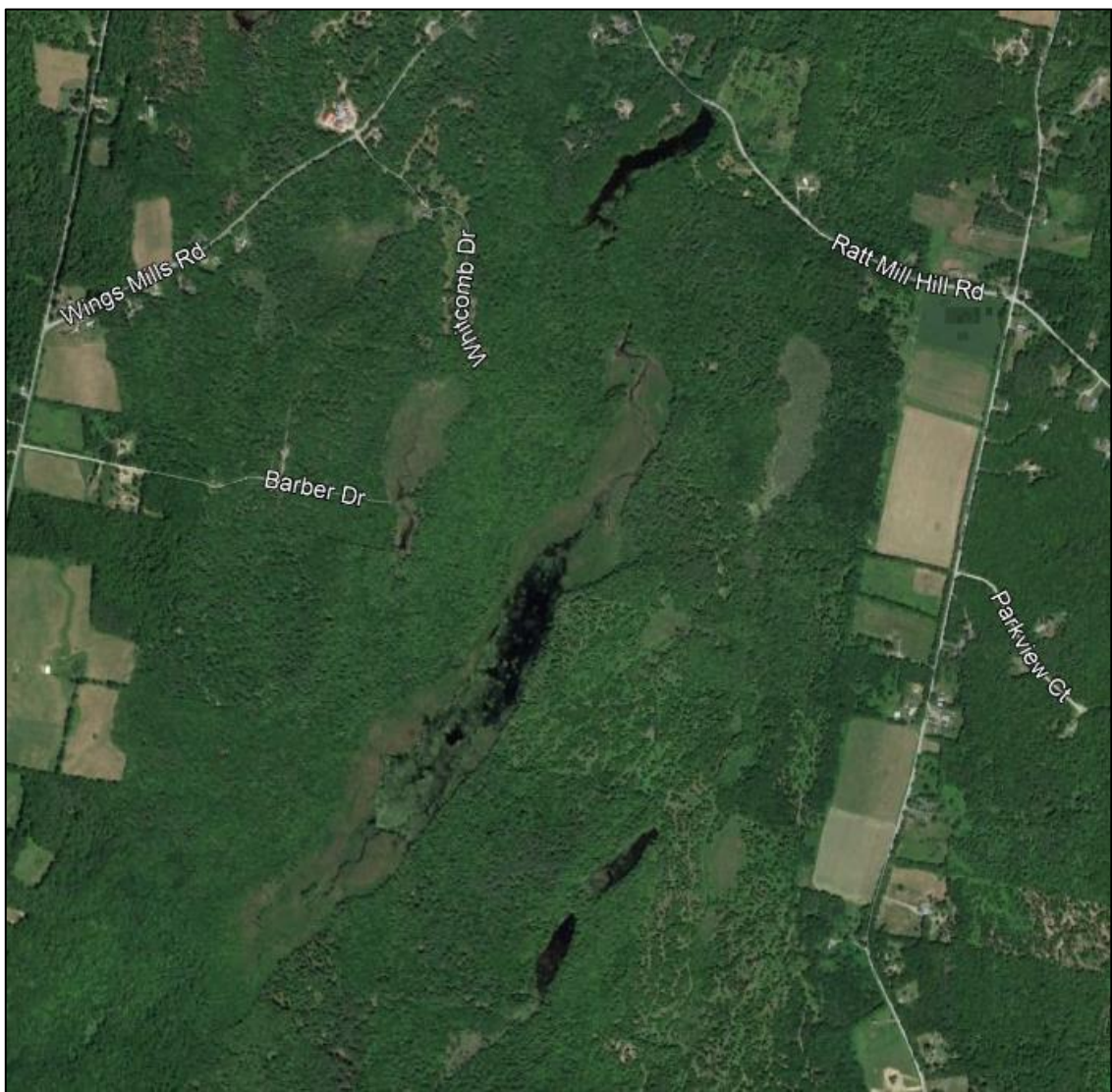
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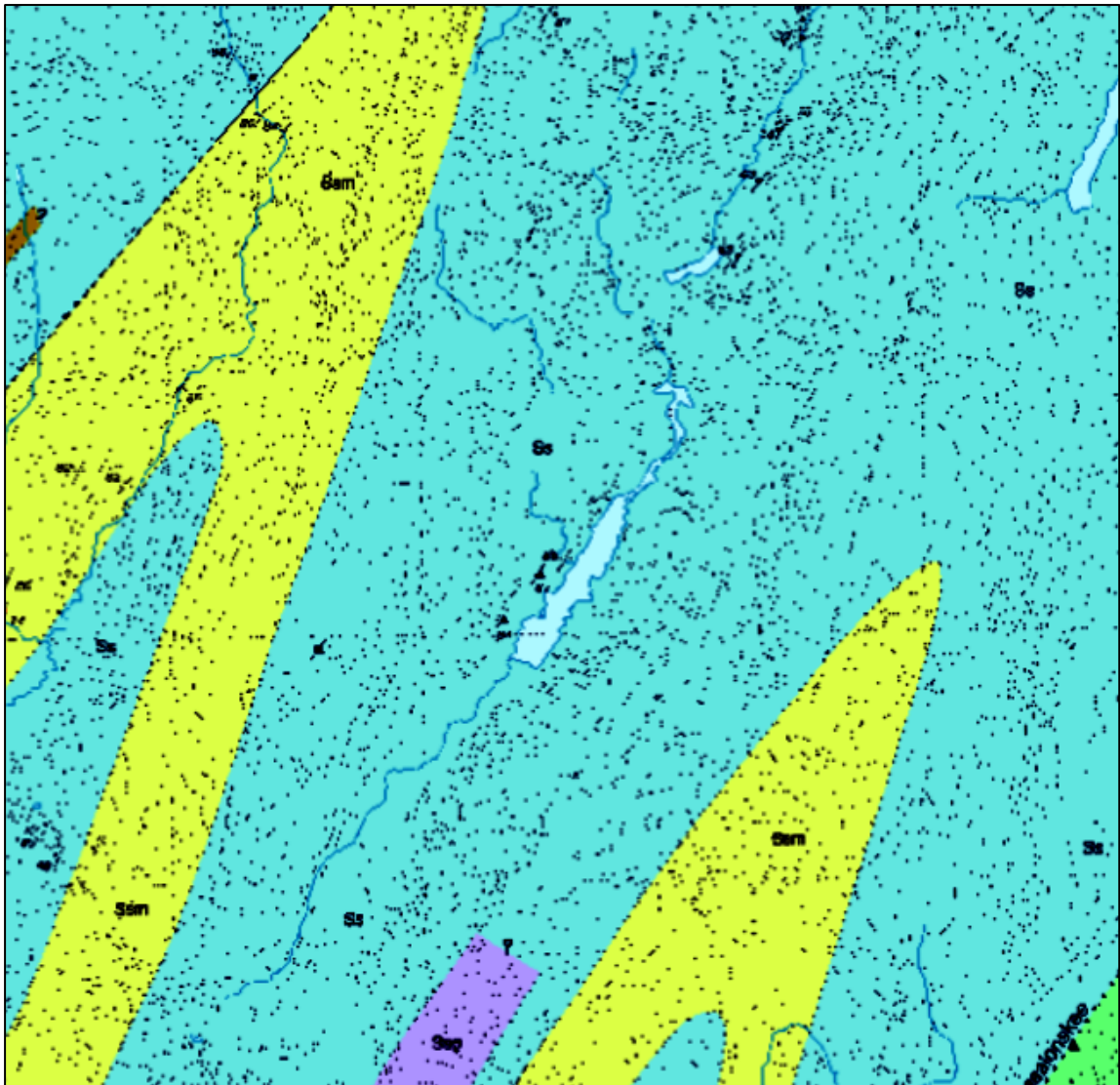
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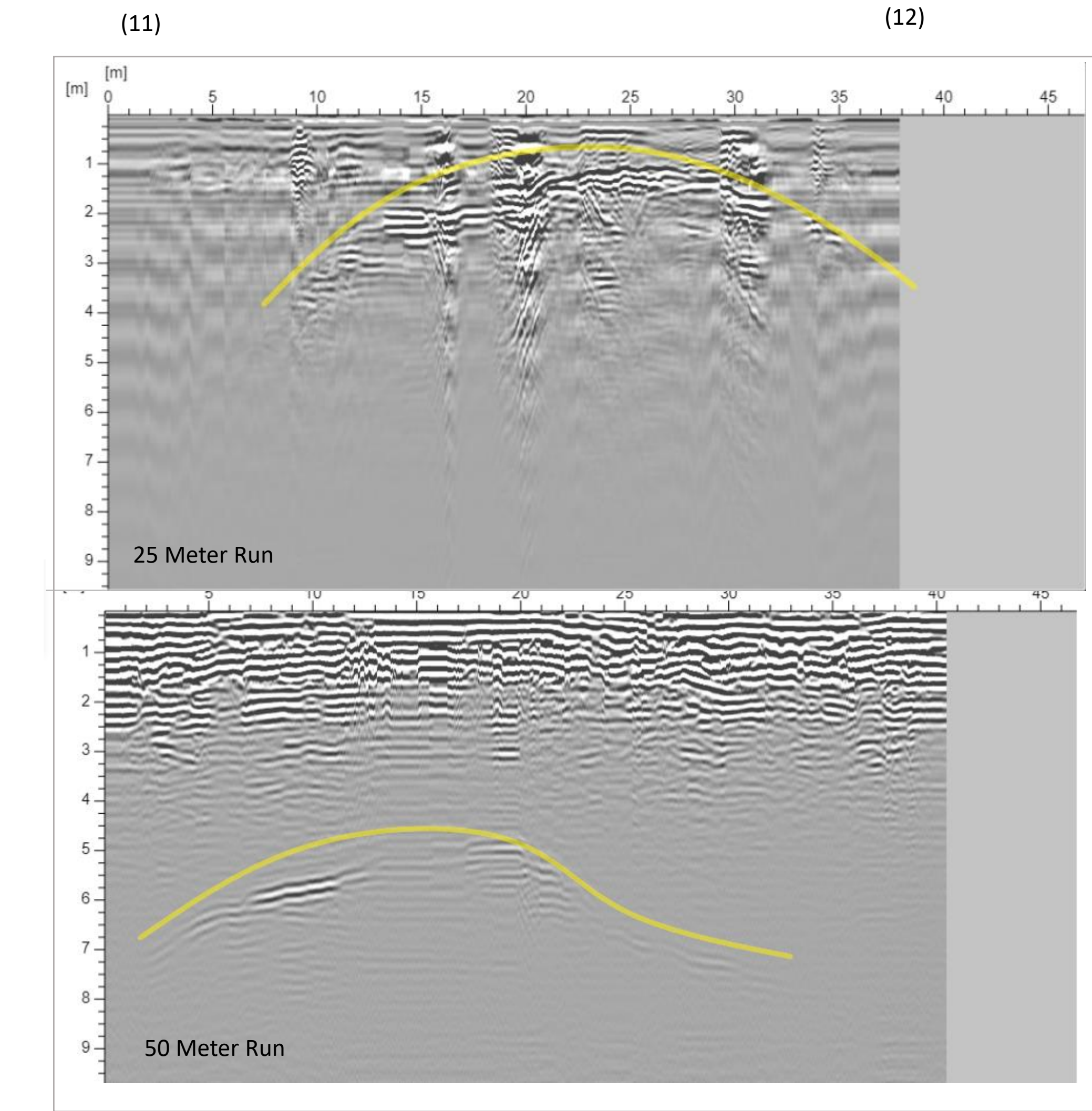
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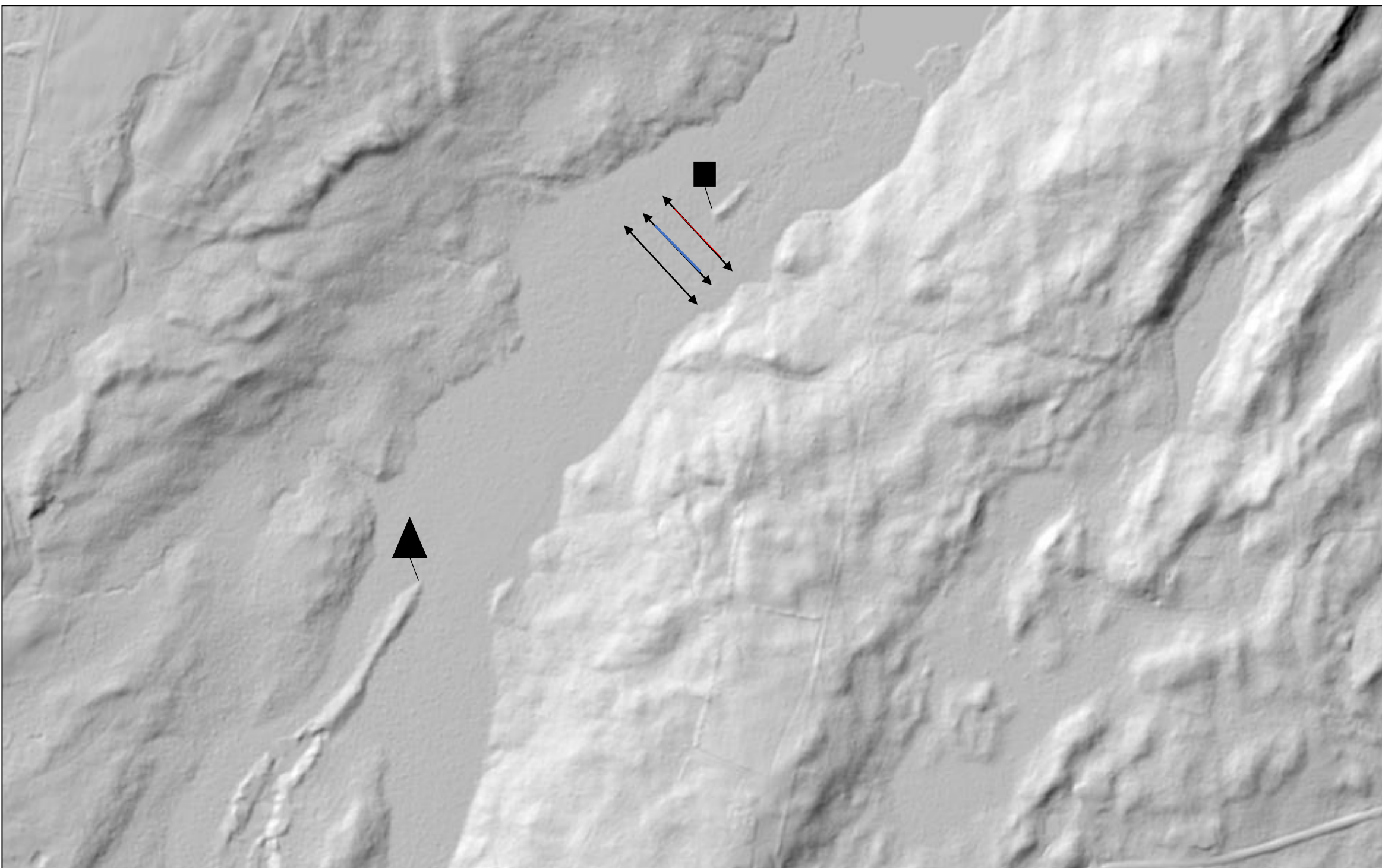


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(10)

Sources for Research

Surficial Geologic Map of Maine (Osberg, Philip H., Hussey, Arthur M., II, and Boone, Gary M., (Editors), 1985)
Readfield Quadrangle, Maine (Hildreth, Carol T., 2004)
Bedrock Geology of the Readfield Quadrangle, Maine (Marvinney, Robert G., and Grover, Timothy W., 2013)
Maine Geological Survey online LiDAR Map
Google Earth