

GPR derived lake bottom elevation and the sUAV derived lake bottom elevation are compared along with the two sediment volume calculations using both remote sensing techniques.



Figure 1 - Site Location Study Site is located at Pecks Pond in the Delaware State Forest of the Pocono Mountains of Pennsylvania. The red marker shows the location of the proposed dam rehabilitation project at the southern end of the lake.



Integrating and Comparing two Remote Sensing Techniques to Quantify Organic Sediment Volume for a Dam Rehabilitation Project at a Pocono Mountain Lake in the Delaware State Forest, Pennsylvania Dr. Chad Freed^{1,3}

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Figure 3 - GPR Equipment Layout and the Common Offset Method GPR transmitter-receiver was placed in a rubber boat to minimize interference. The radar waves for the survey reflect from the lakebed surface and the top of bedrock surface. Common offset and travel times are used to calculate depth to reflective layers.





Figure 4 - GPR Survey Transects The GPR survey across the lake concentrated on the southern region, behind the existing dam.



https://www.dji.com/phantom-4

the elevation of the drained lake bottom.

Field Investigation - sUAV

GPR Survey – Bedrock and Lakebed CPR Survey – Bedrock and
CPP Survey - Redrock and
Aerial Survey for the 22,788,091 Lakebed

(1%) Difference in the total volume of calculated organic sediment (OH).