

## **A Study of Pebbly Loess on the North and South Fork of Long Island, New York**

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This research is a study of the presence and composition of pebbly loess on the North and South Fork of Long Island. These studies found a varying percentage of sand, silt, clay and percent pebbles within the pebbly loess.

Pebbly loess was found at all of the studied research sites on both the North and South Fork of Long Island. The average percentage of pebbles was 13.8% on the North Fork and 11.79% on the South Fork. There is not a satisfying model for how loess, a wind-blown and deposited, sediment, contains pebbles. The pebbles which are generally less than 5 cm in diameter cannot be transported via normal eolian processes associated with loess deposition. The presence of pebbles has been suggested to be associated with some sort of impact or bioturbation but these models do not adequately explain the occurrence of pebbly loess.

In comparison to previous studies of locations on Long Island including the Long Island Pine Barrens and the South Fork of Long Island, the North Fork has a significantly higher level of silts and clays in proportion to sands. The North Fork's samples were categorized by the US Department of Agriculture's soil texture triangle as predominantly loam or sandy loam. This clay and silt rich soil is not found on the South Fork. The South Fork had a large percentage of sand, with a mean of 74% sand, compatible with the US Department of Agriculture's soil texture triangle as either sand or loamy sand.