

CAMPUS GEOLOGY

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Glacial History

- 24,000 BP Glaciers approached Northern New England
- 21,600 BP Glaciers on Long Island (Sirkin, 1996)
- Glaciers gone by 18,000 BP (Sirkin, 1982)

Glacier advancing

- Climate changed from pine, birch, oak and hemlock forest at 28,000 BP to tundra by 18,000 BP (Sirkin, 1996)
- Margin of glacier was in the vicinity of Long Island for 2,000 to 3,000 years
- Permafrost may have lasted until 13,000 BP



Till

Rotated block of
sand and gravel

Alluvial sand
and gravel

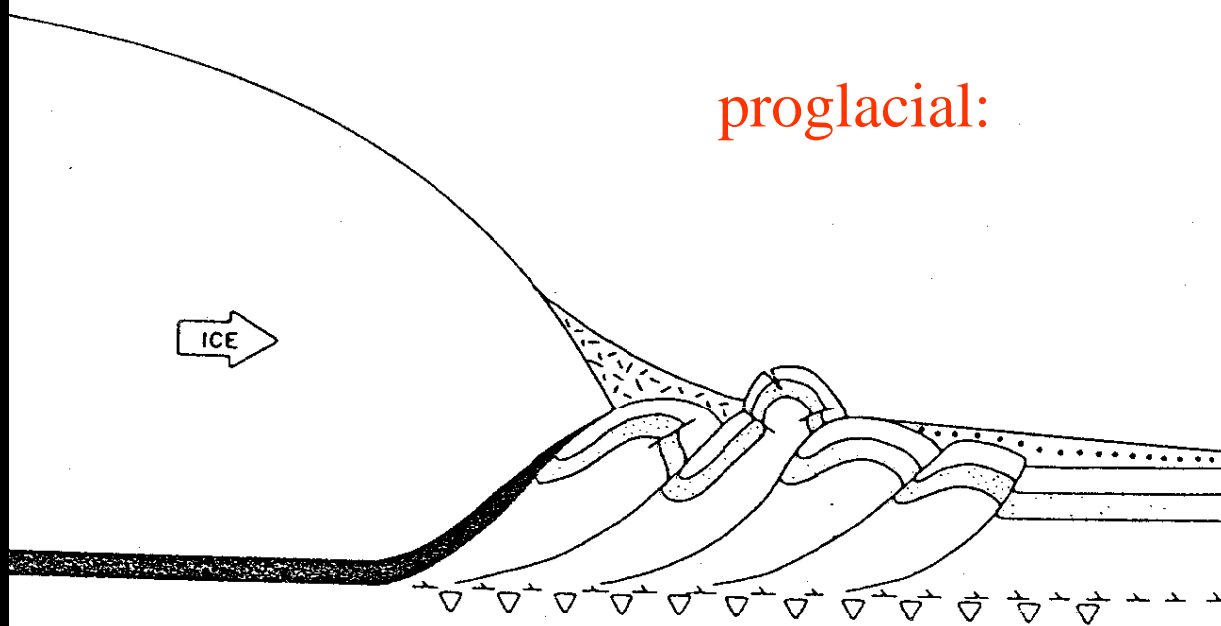
Section on Campus

<http://www.geo.sunysb.edu/lig/Conferences/abstracts-04/nienstedt/nienstedt.htm>

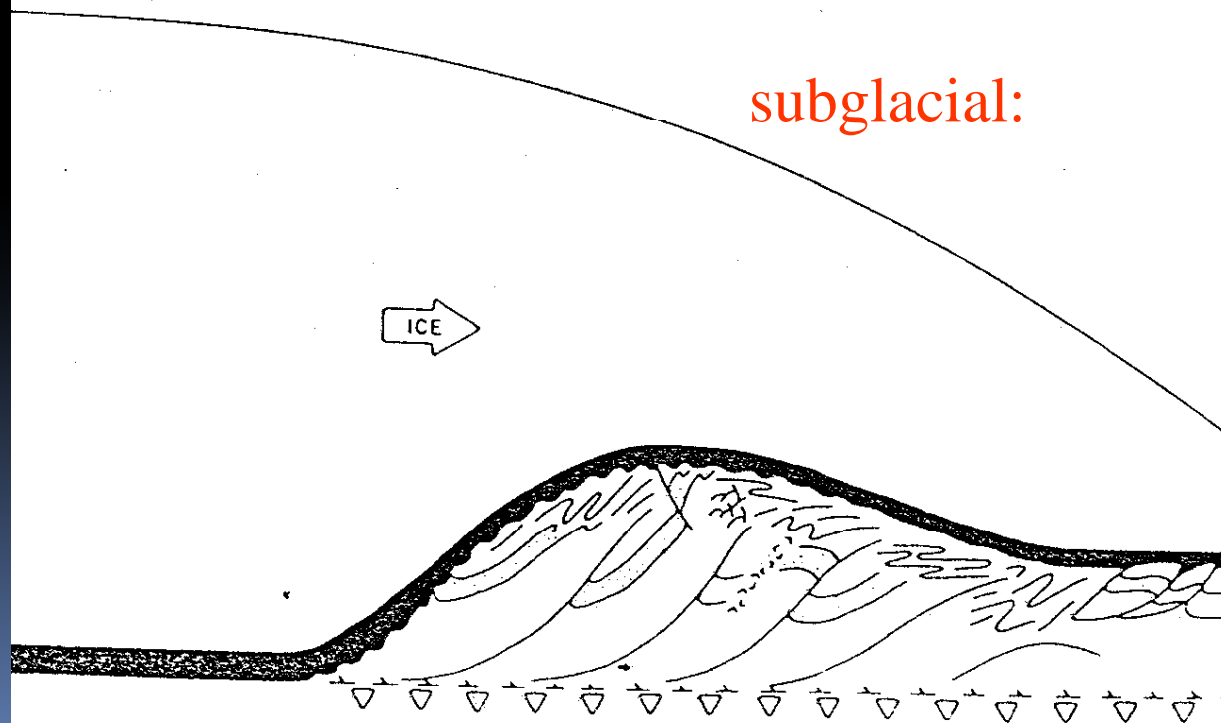
Glaciotectonics

- As the glacier advanced over Long Island's unconsolidated sediments it bulldozed them.
- http://pbisotopes.ess.sunysb.edu/reports/dem_2/glaciotectonics.htm

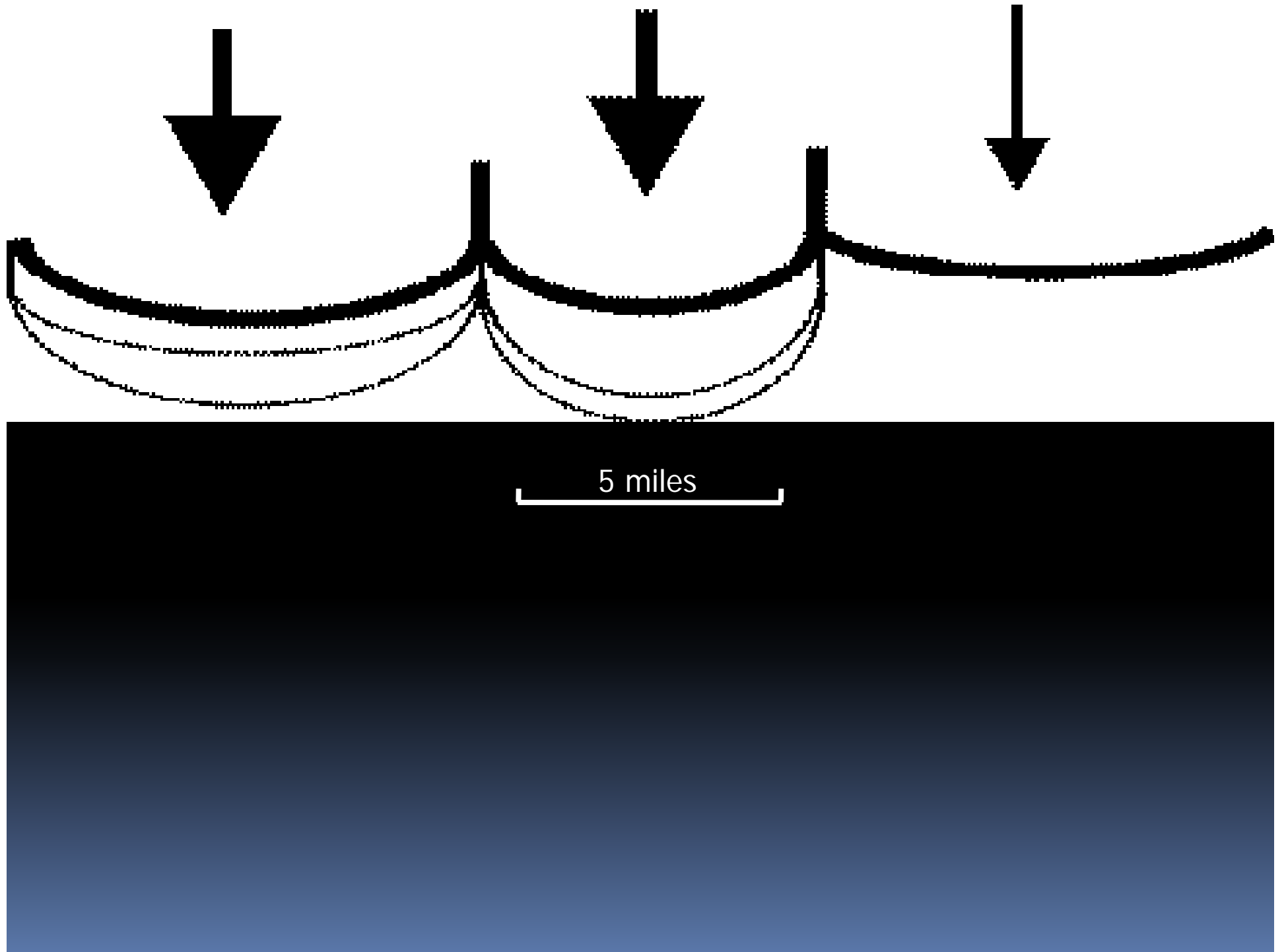
proglacial:

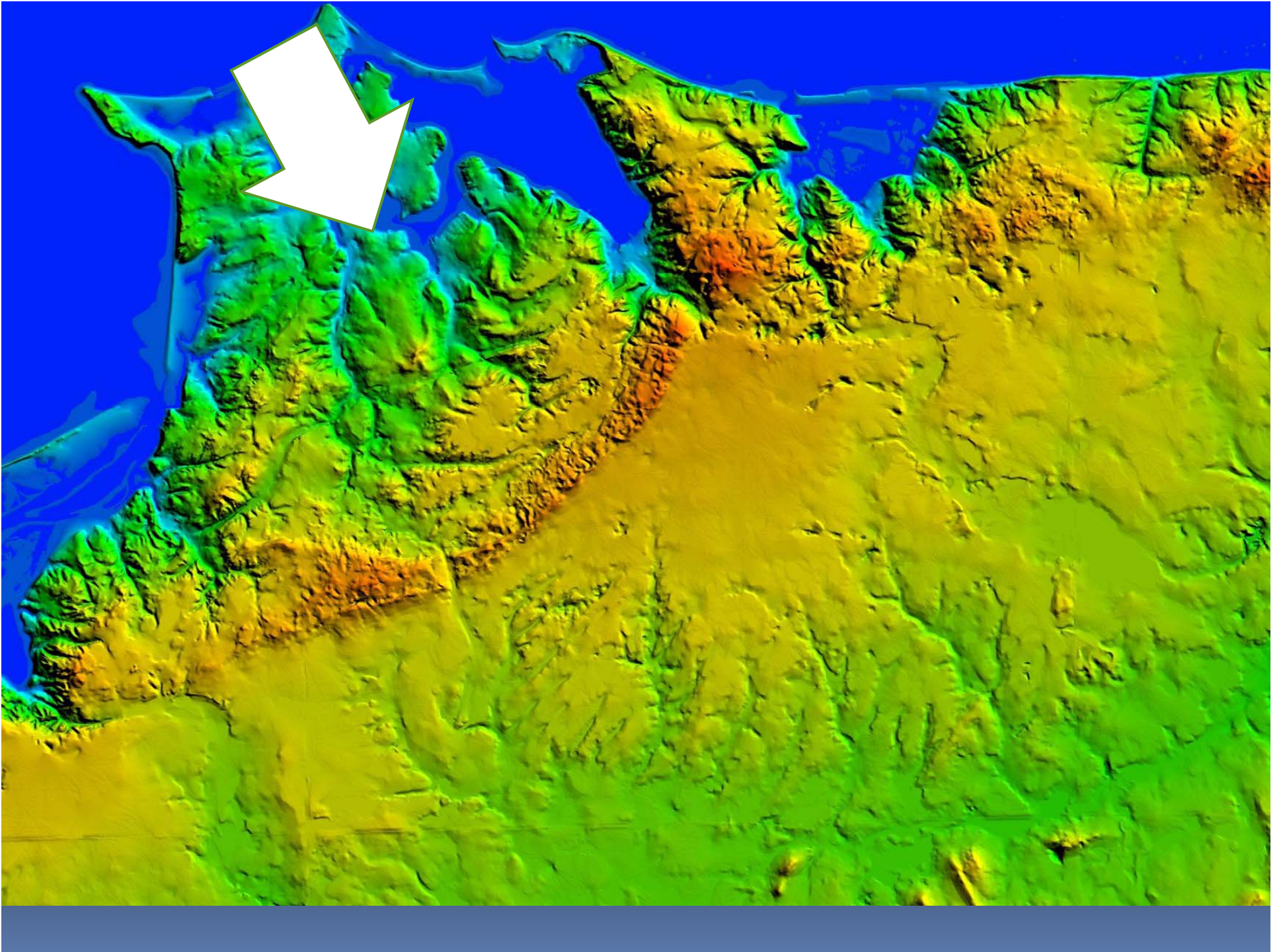


subglacial:



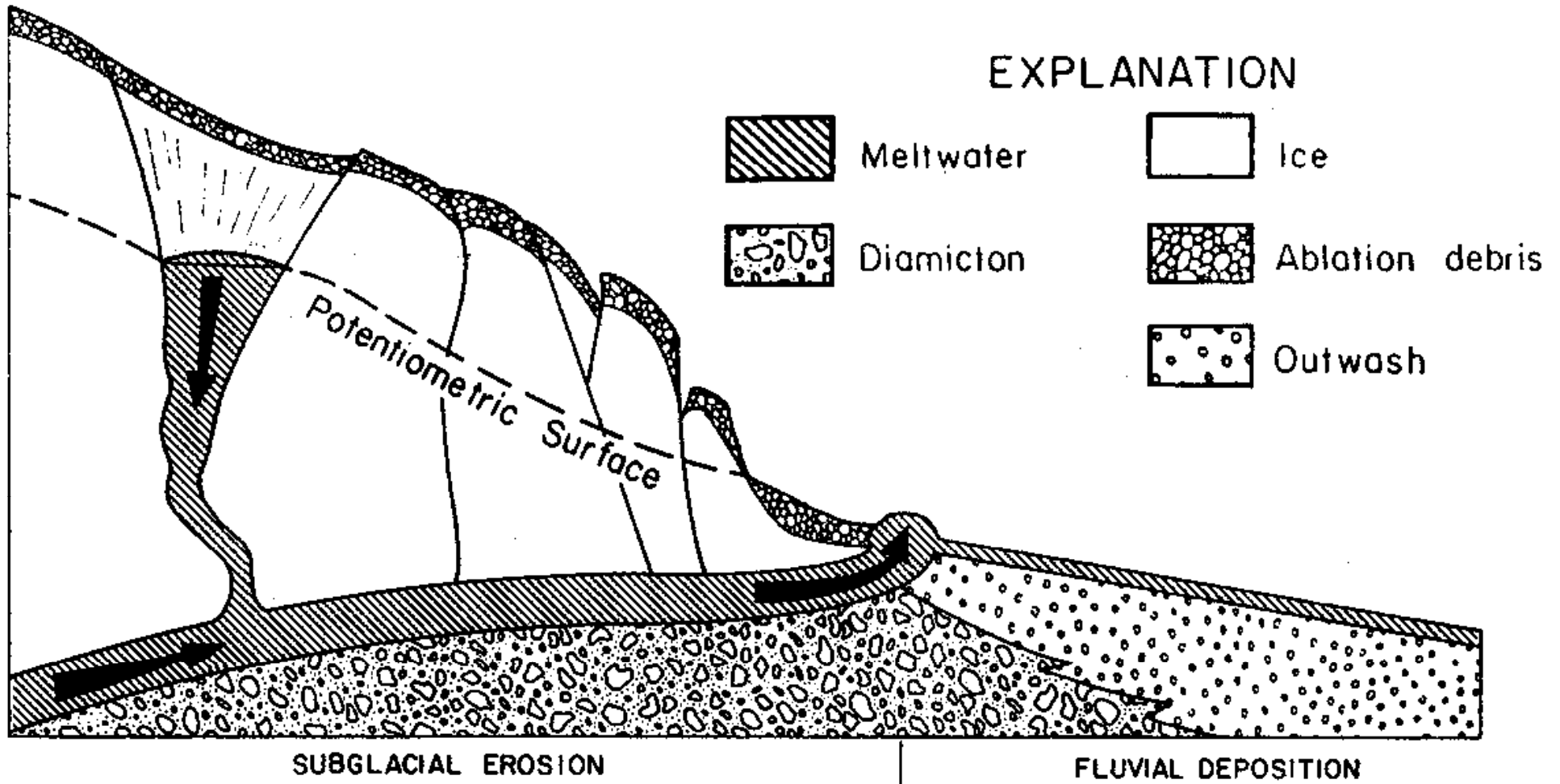
Aber. 1982





Tunnel Valleys

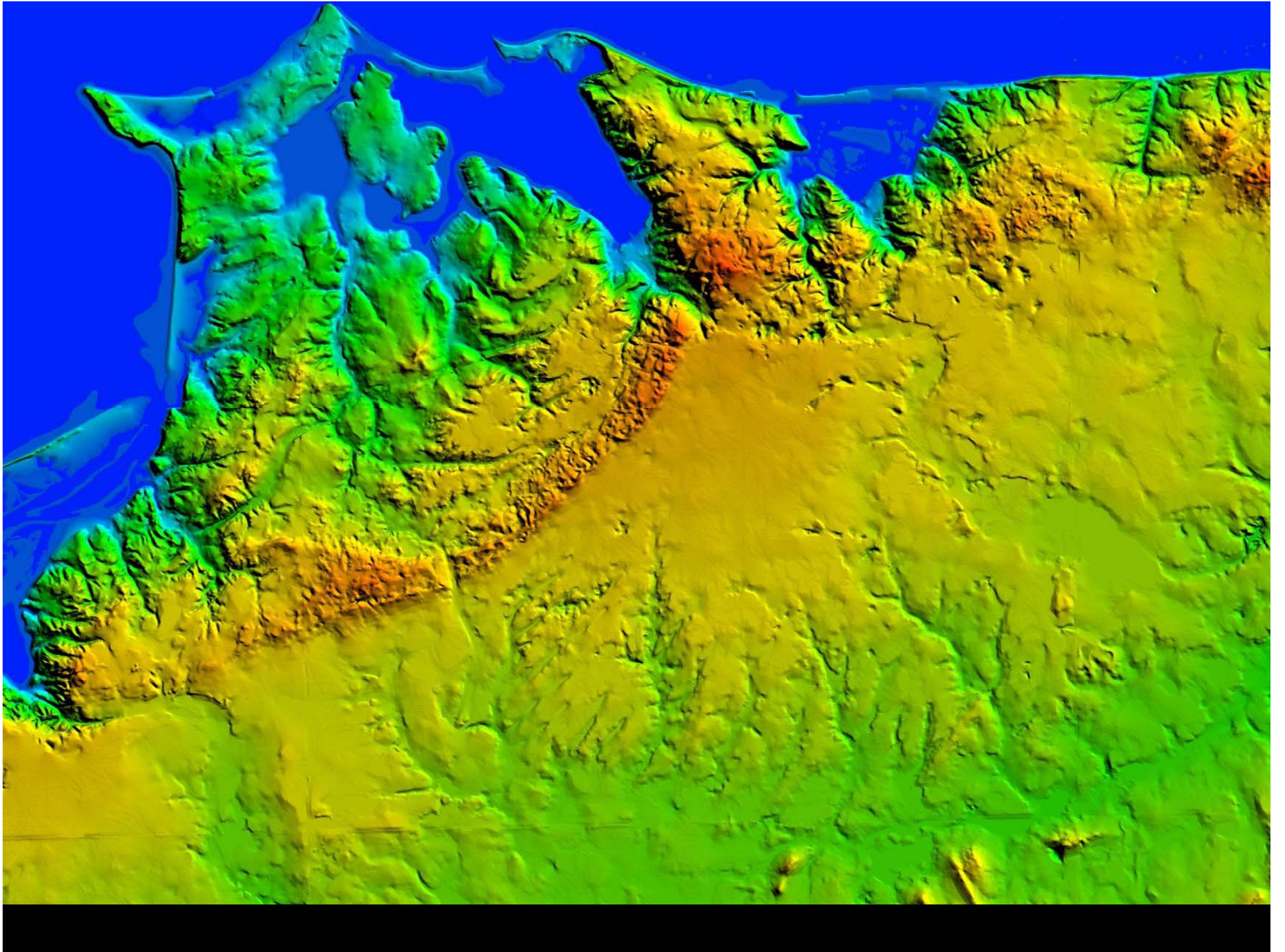
- Valleys formed by subglacial streams that may run uphill
- Common along Long Island's North Shore
- http://pbisotopes.ess.sunysb.edu/reports/dem_2/tunnel_valleys.htm



Gustafson and Boyd (1987)

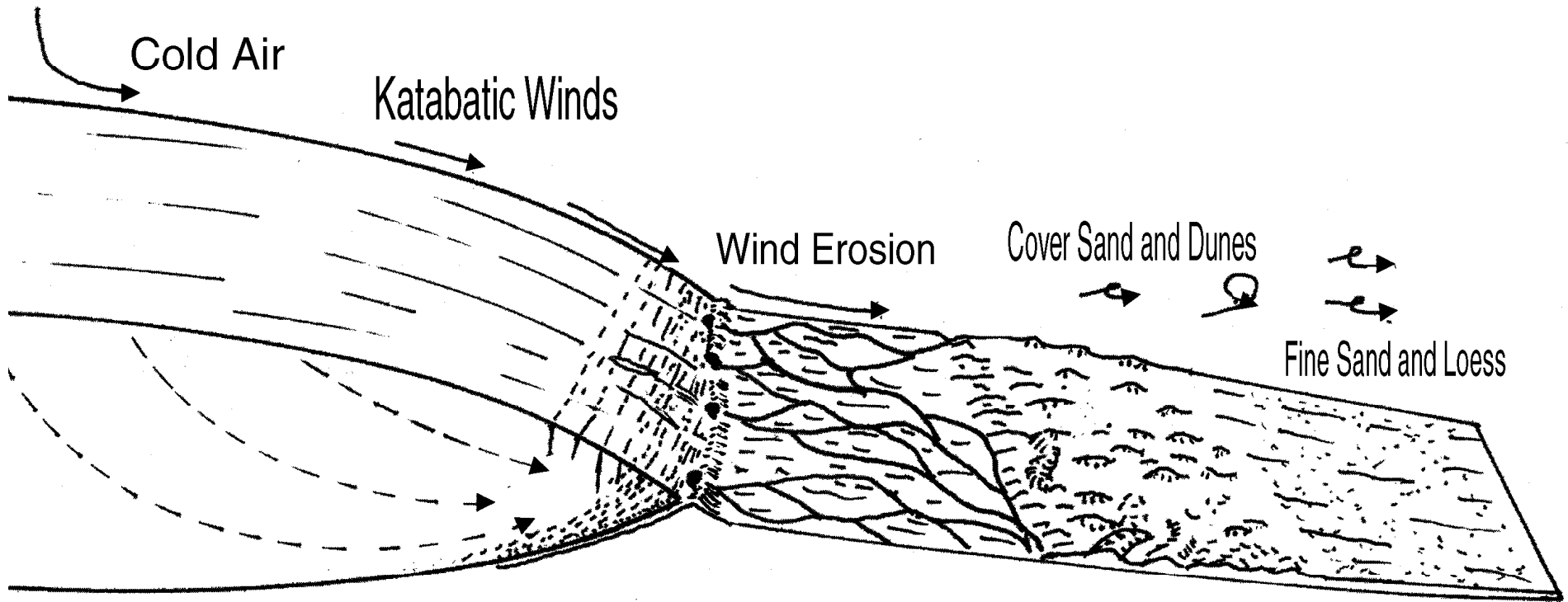


Anderson and Borns, 1994



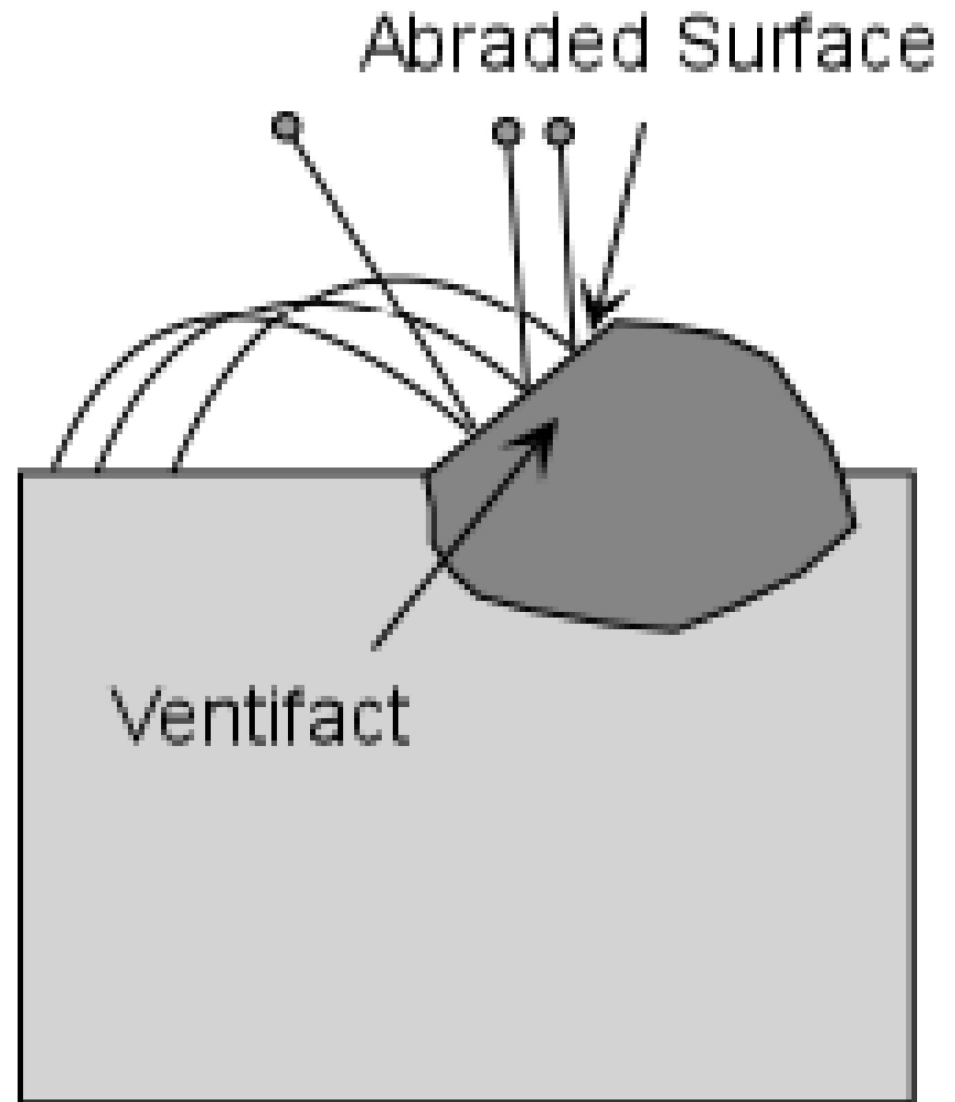
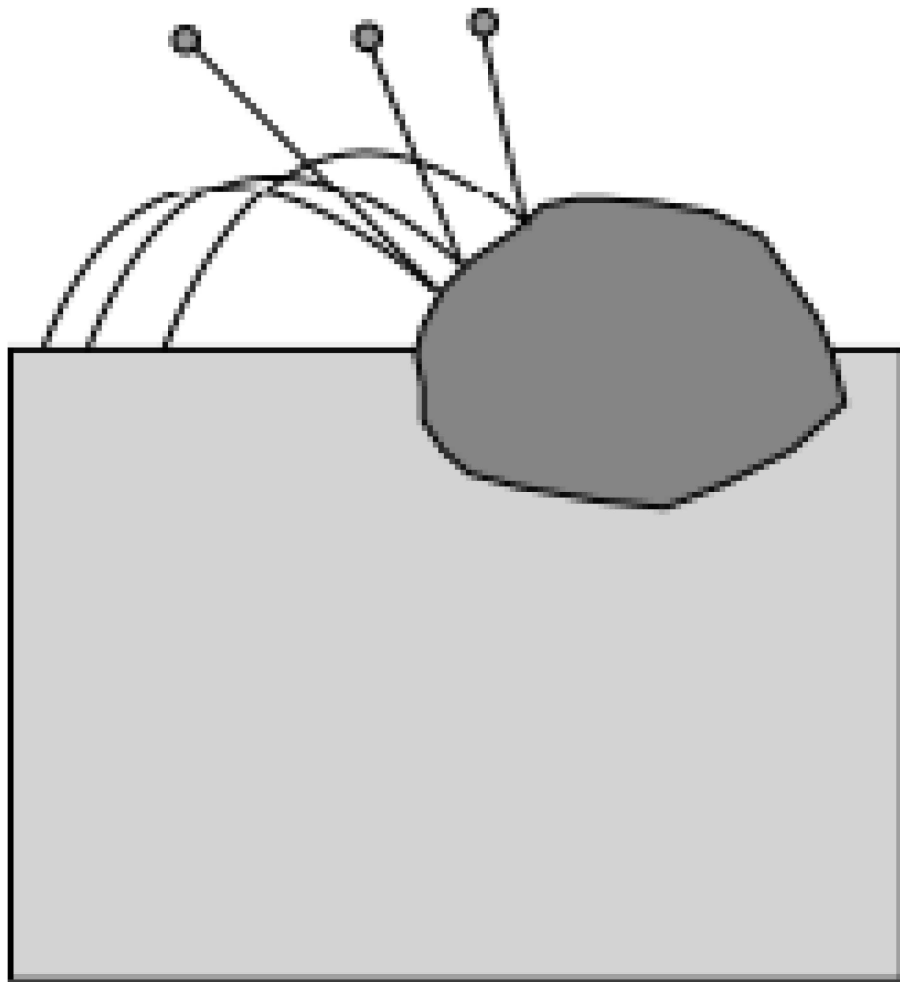
Katabatic Winds

- Ventifacts
- Loess -- Wind blown silt
- Several feet to inches thick on Long Island

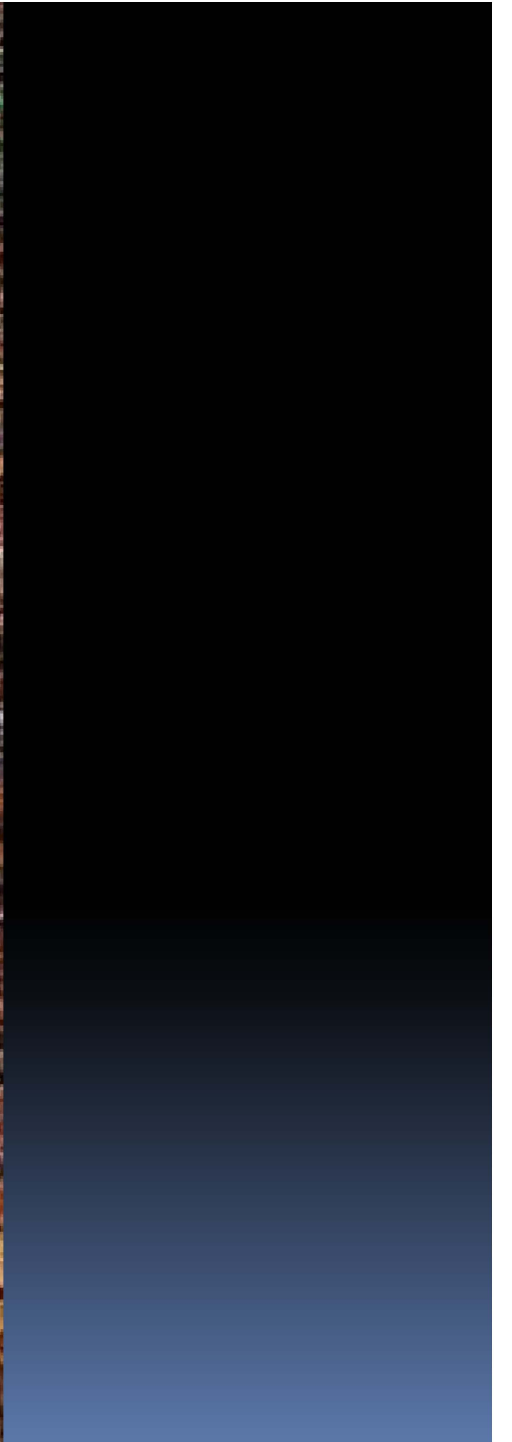


Modified from Anderson and Borns, 1994

Wind Direction



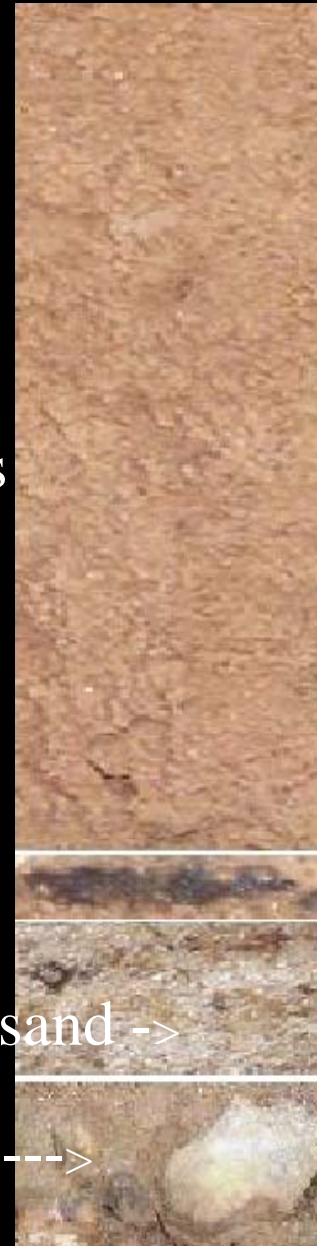
<http://earthsci.org/education/teacher/basicgeol/windes/windes.html>



Campus Site



Zhong, 2002



Loess

<- Wind blown sand ->

<----- Till ----->

Summary

- **Timing**
- **Glaciotectonics**
- **Tunnel Valleys**
- **Katabatic winds**

