

STONY CLOVE CREEK AT CHICHESTER SITE 2



Photo Credit:
Danny
Davis

GOALS

- Quantify how much sediment has entered the stream
- Generally find out how fast it has been occurring

THE BIG PROBLEM



1900



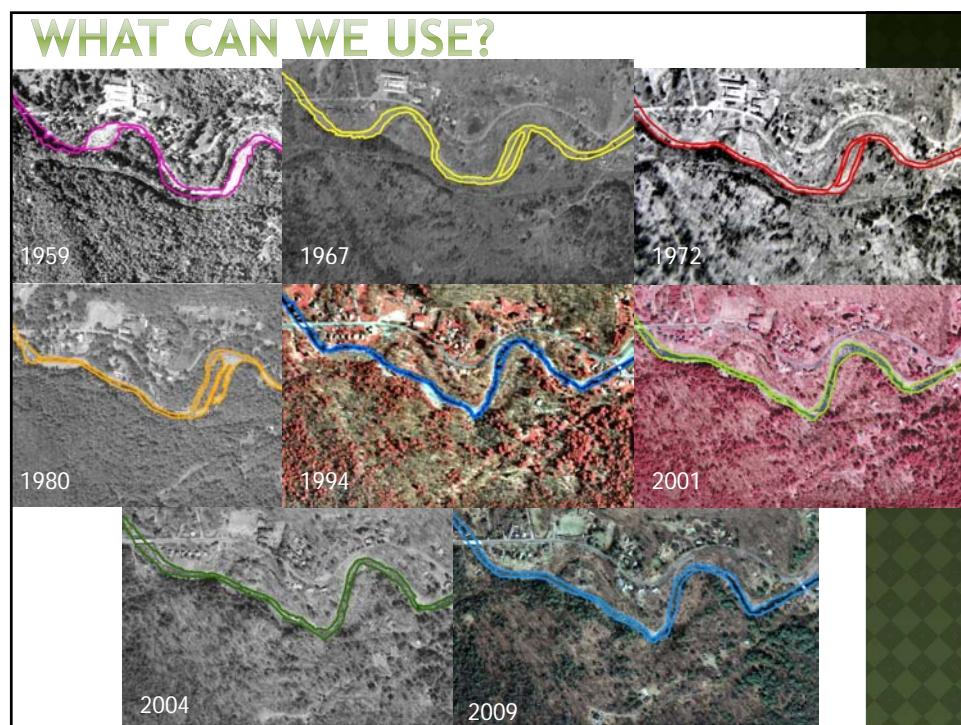
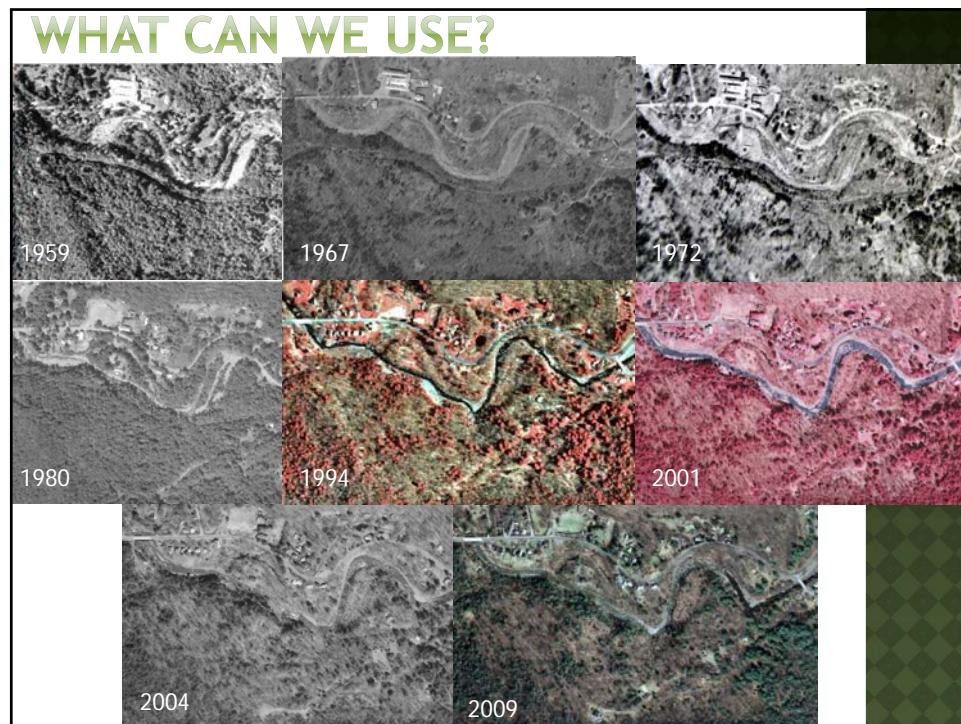
1950

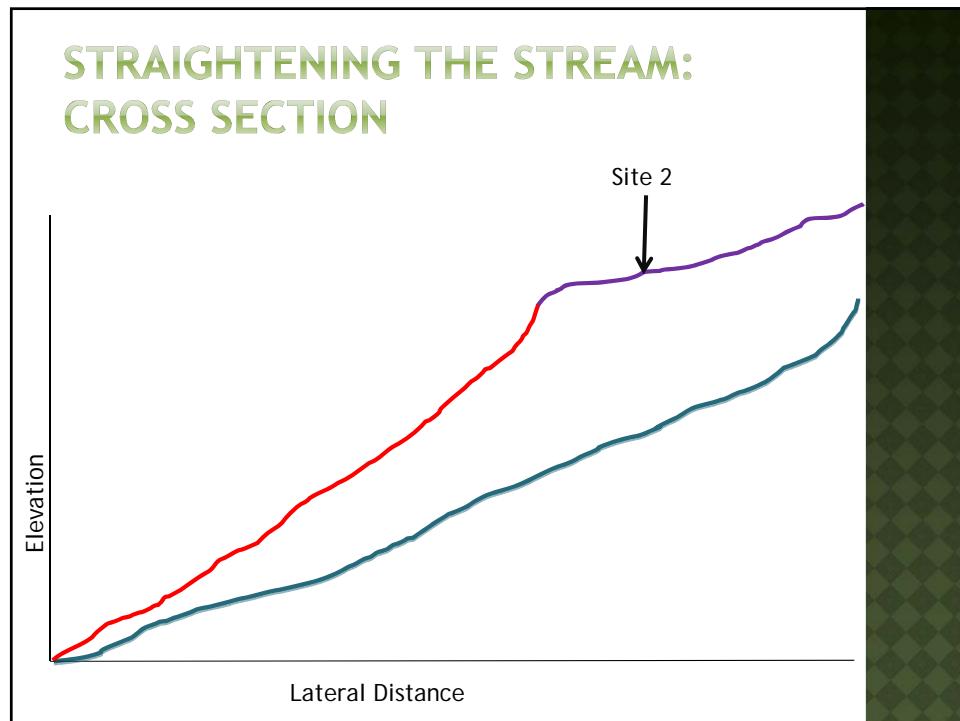
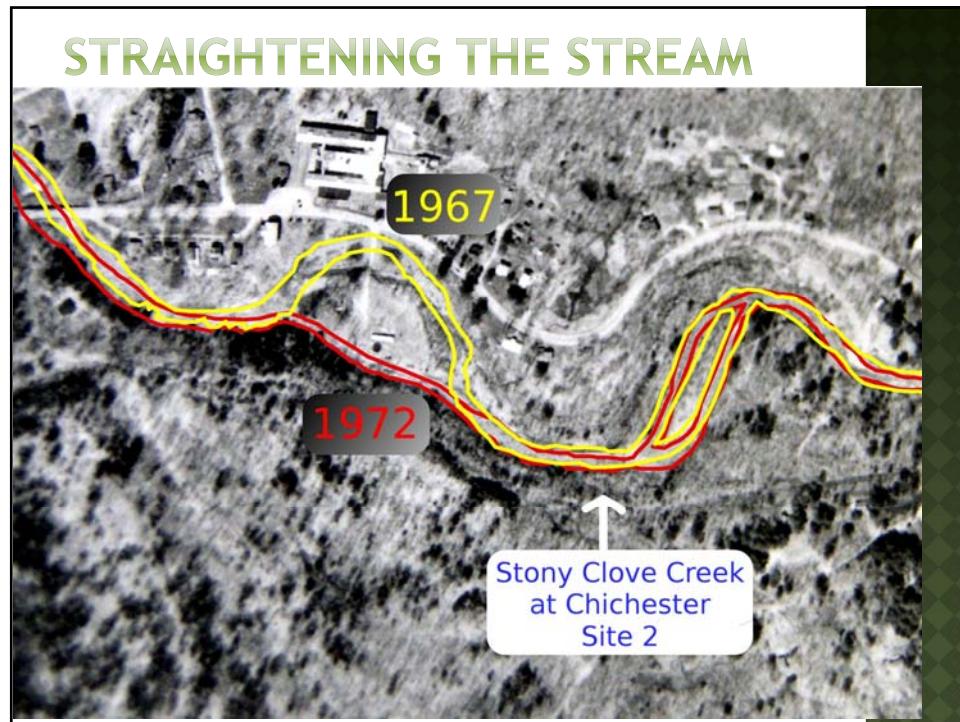


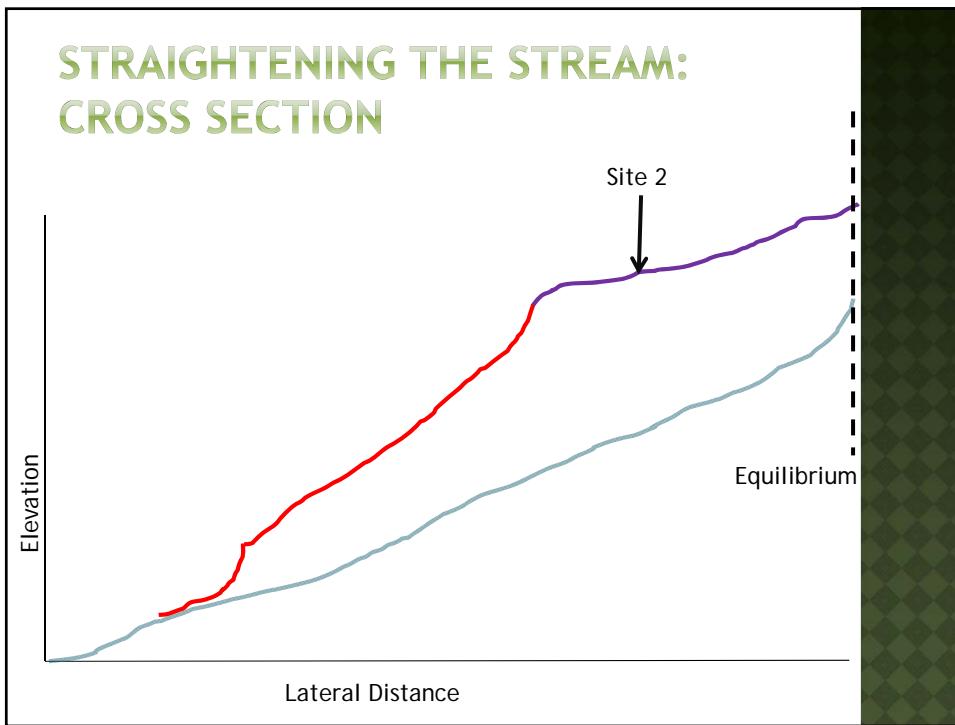
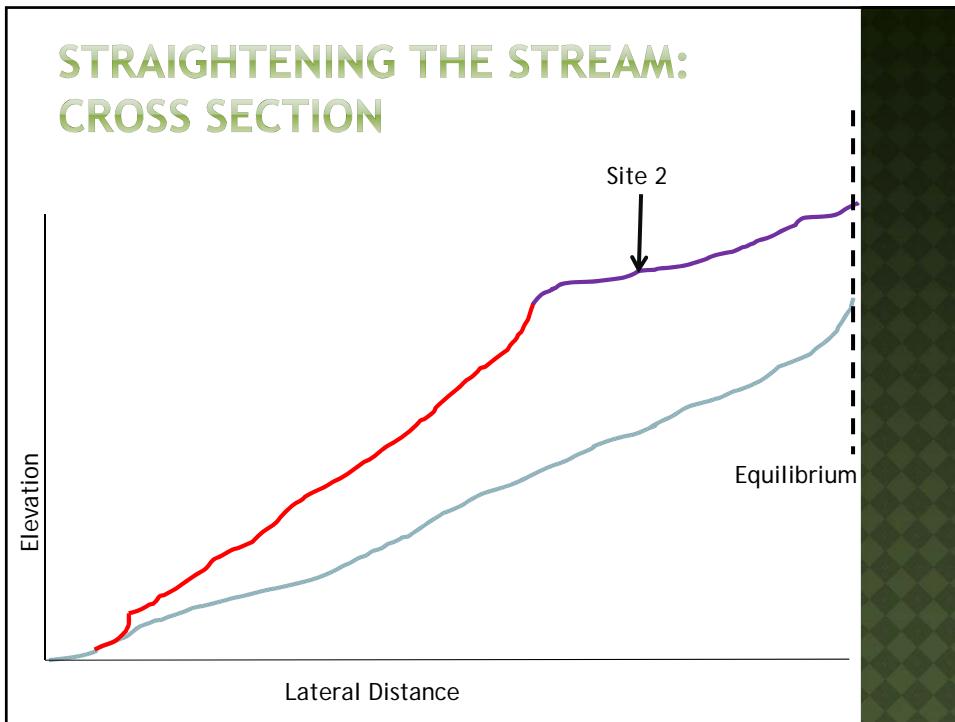
1975

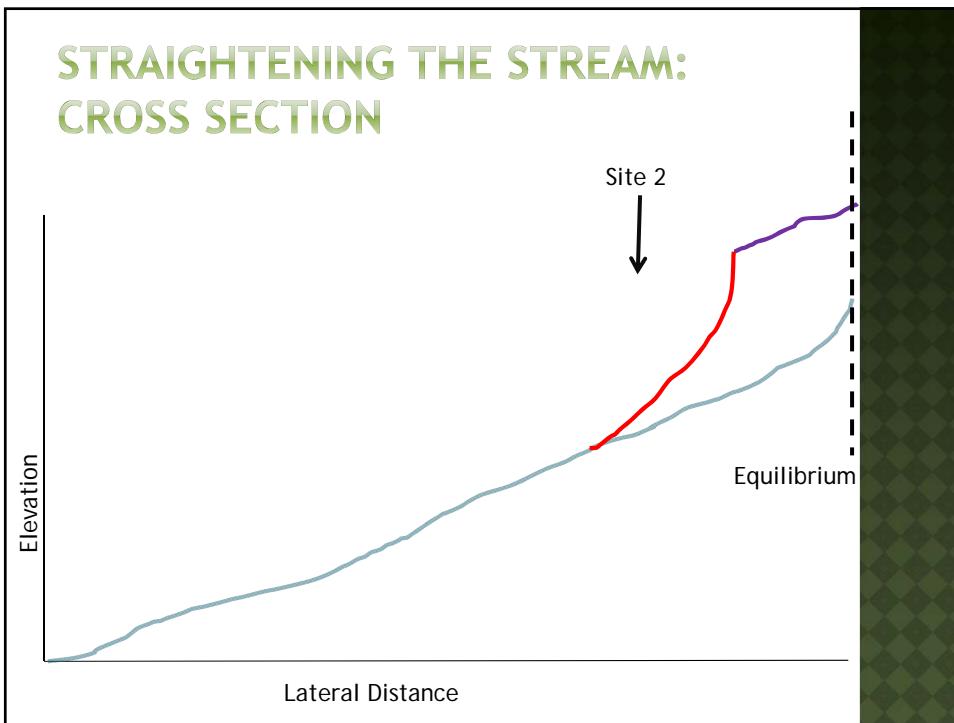
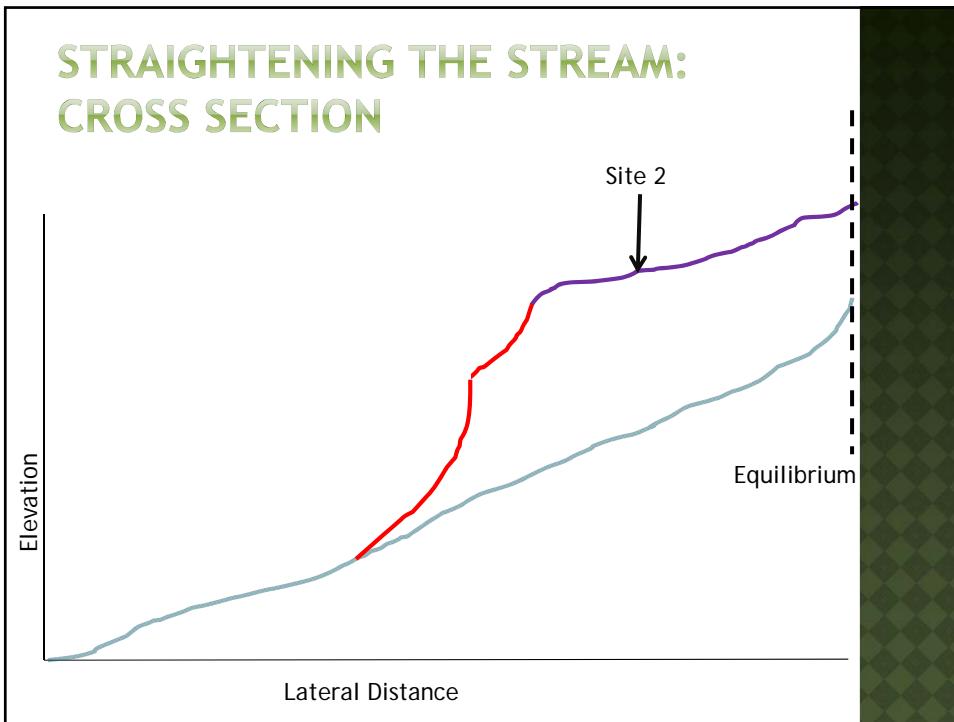


2012



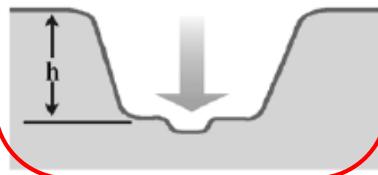






STRAIGHTENING THE STREAM: CROSS SECTION

Stage III. Degradation
 $h < h_c$



Credit: A. Simon, 2006

SOUTH BANK EROSION: MAP VIEW

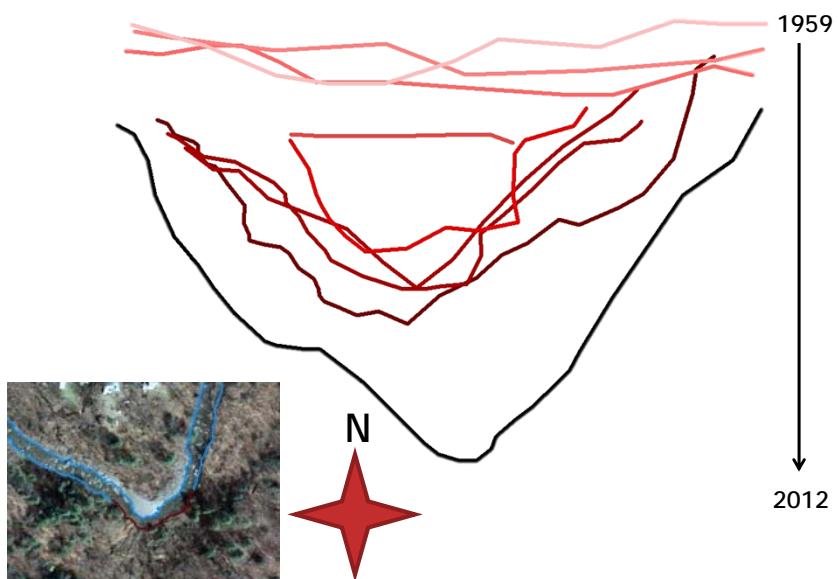


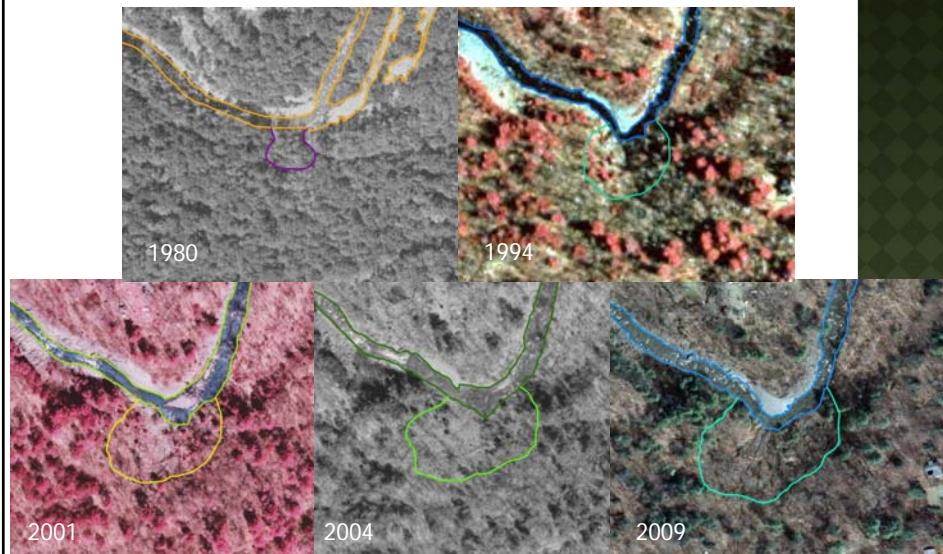


Photo Credit:
Danny Davis

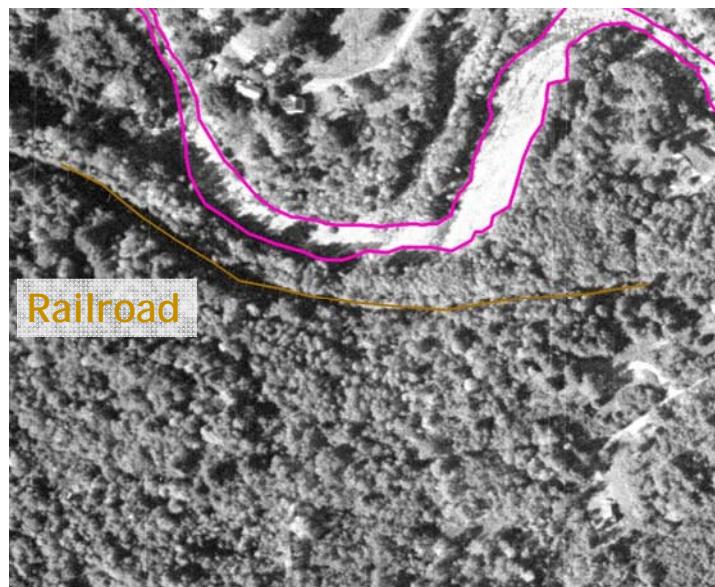


Photo Credit:
Danny Davis

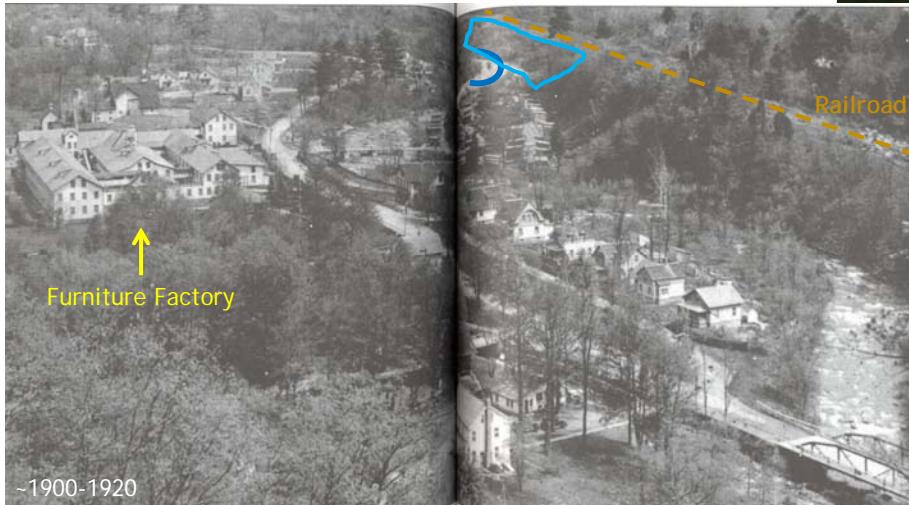
EDGE OF THE EROSION



1959



EARLY CHICHESTER



~1900-1920

Photo Source: The Mountains Look Down: A History of Chichester, a Company Town in the Catskills

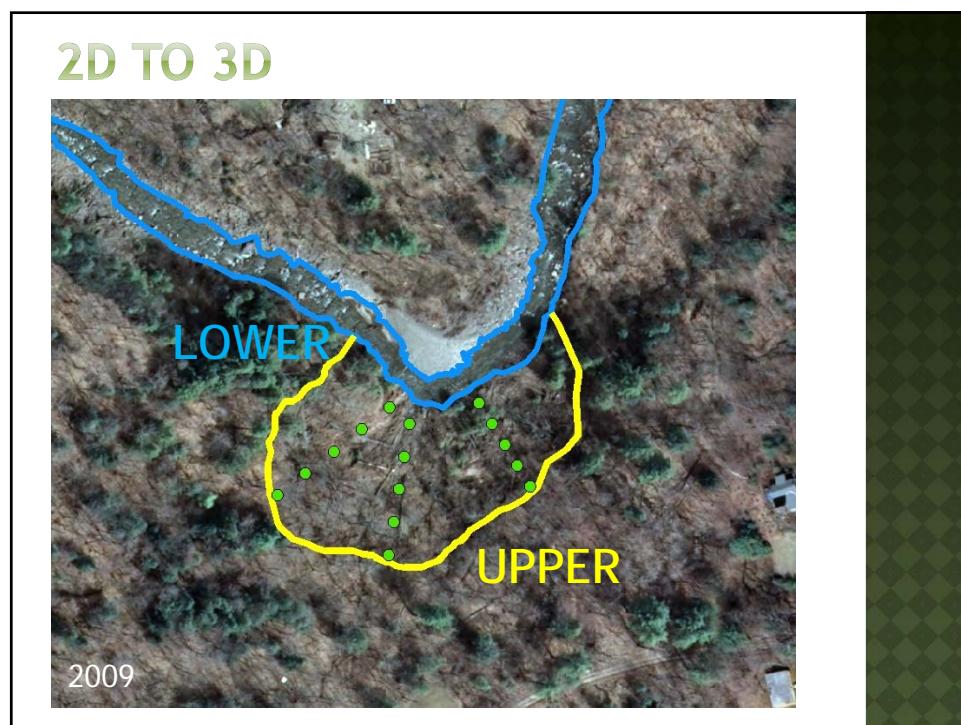
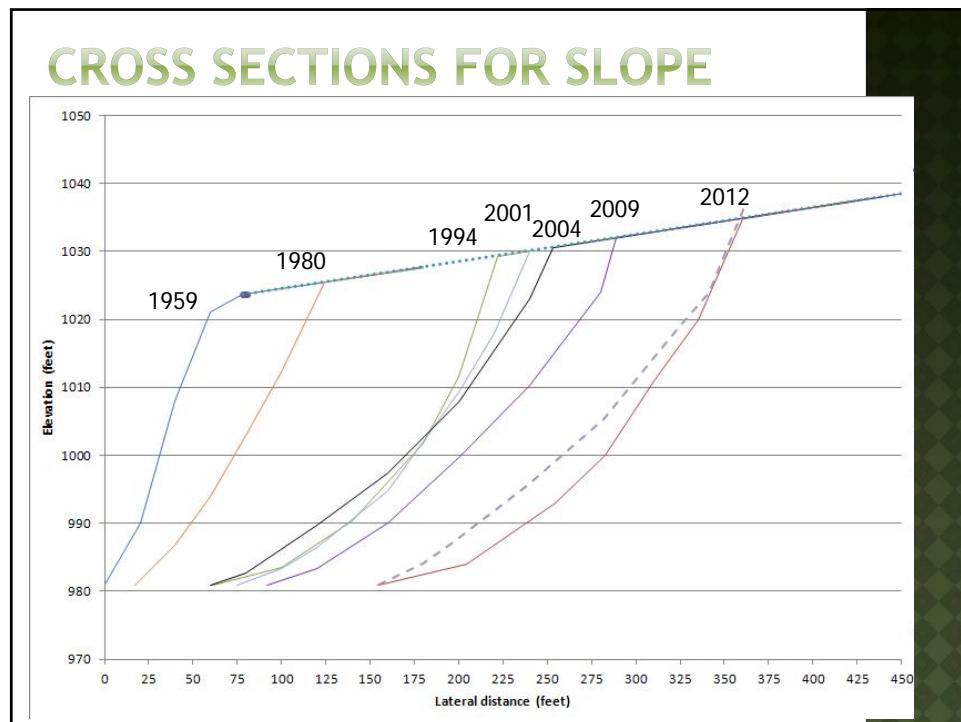
2012



Note: Aerial photo is
not lined up perfectly!

42°40'00.26" N 74°15'19.66" W elev 2205 ft

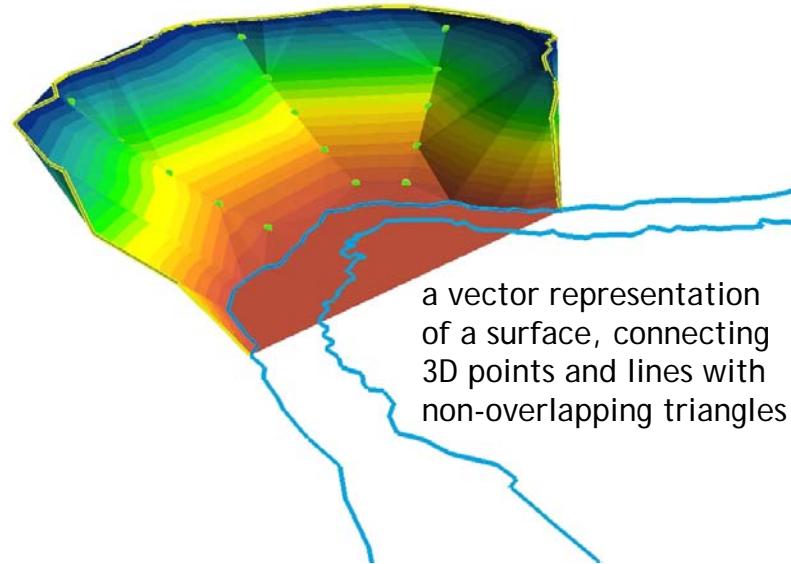
Aerial photo: Google Earth Images, 10/8/11



2D TO 3D



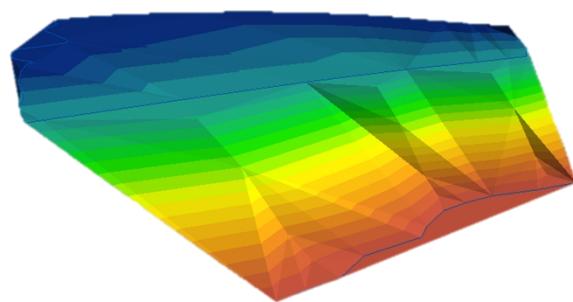
TRIANGULATED IRREGULAR NETWORK (TIN)



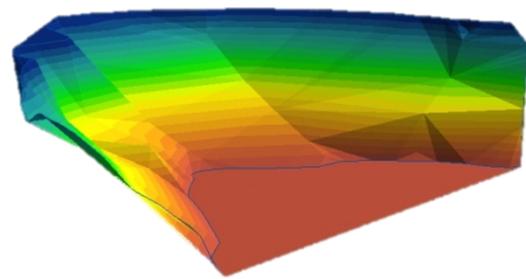
MODEL VISUALIZATION

3D model can be viewed at:
<http://vimeo.com/48302895>

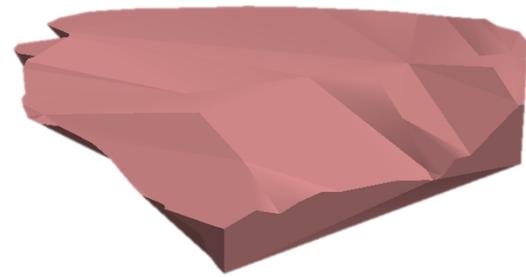
SEDIMENT VOLUME ANALYSIS



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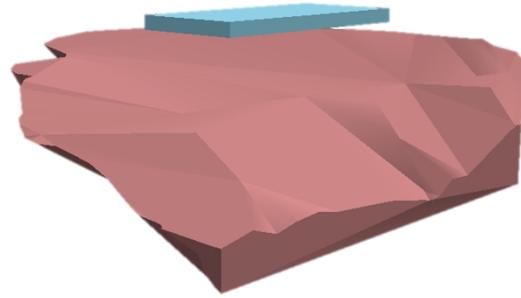


SEDIMENT VOLUME ANALYSIS



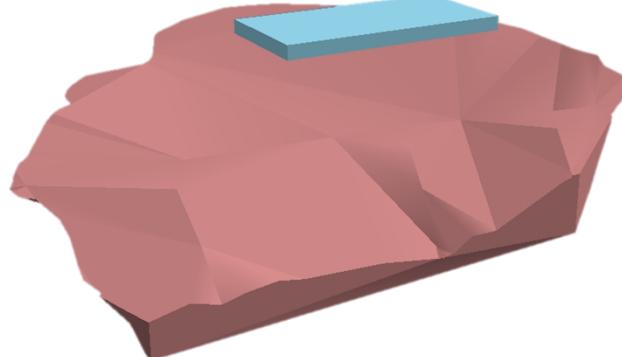
2,410,106 cubic feet of
sediment lost 1970-Present

SEDIMENT VOLUME ANALYSIS



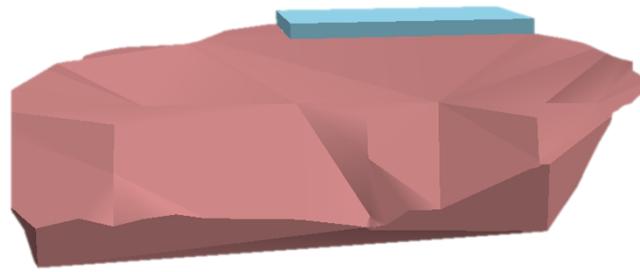
(~27 olympic-sized swimming pools)

SEDIMENT VOLUME ANALYSIS



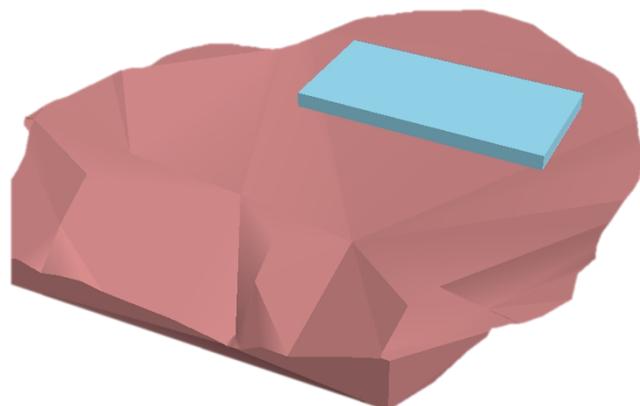
(~27 olympic-sized swimming pools)

SEDIMENT VOLUME ANALYSIS

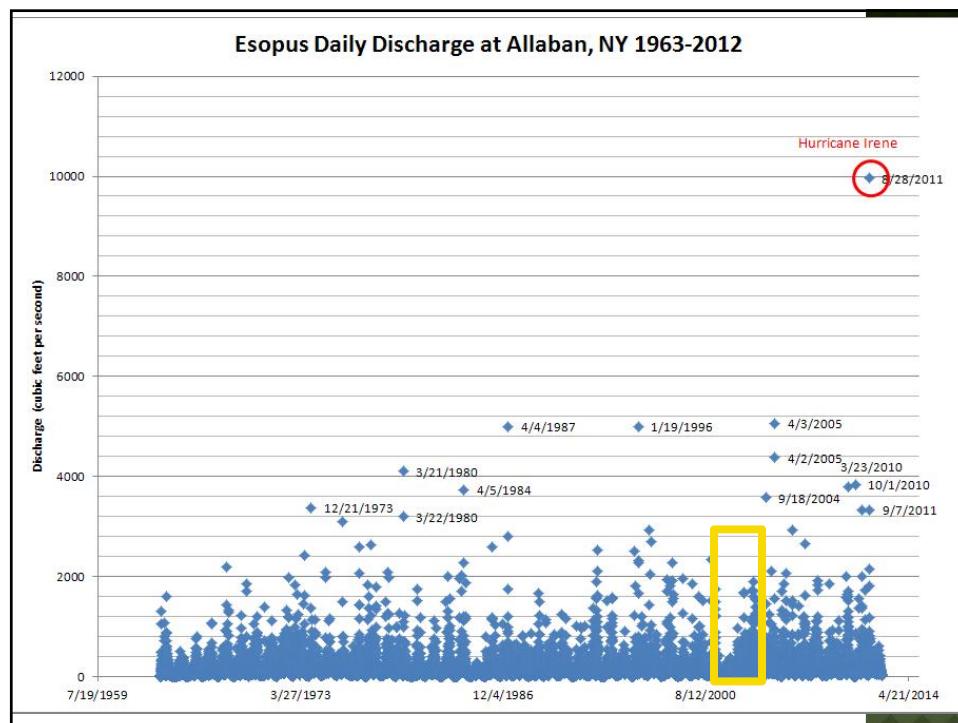
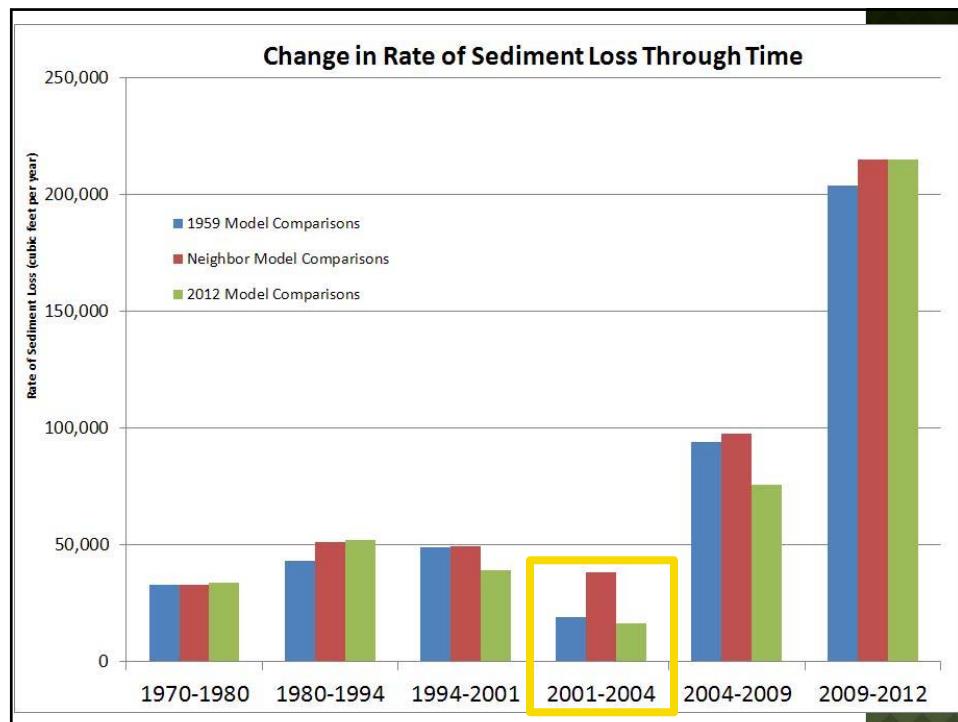


(~27 olympic-sized swimming pools)

SEDIMENT VOLUME ANALYSIS



(~27 olympic-sized swimming pools)



CONCLUSIONS

- Stony Clove Creek at Chichester Site 2 began forming after stream straightening around 1970
- From 1970-2012, the feature has contributed a very significant 2.4 million cubic feet of clay into the creek
- The rate of sediment loss is increasing

ACKNOWLEDGEMENTS

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 - Danny Davis
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- New York State Archives