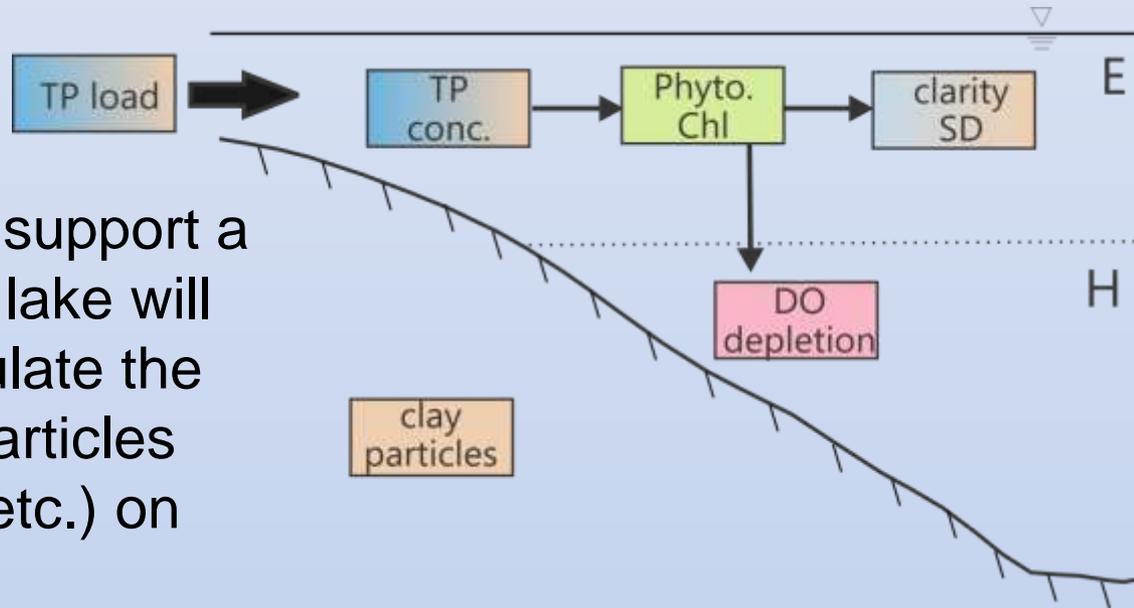


Unquestionably, Minerogenic Particles Interfere with the Trophic State

Signatures of TP and SD in Cayuga Lake

- a water quality model to support a P TMDL analysis for the lake will necessarily have to simulate the effects of minerogenic particles (e.g., sediment, tripton, etc.) on TP and SD



- necessary supporting monitoring conducted – TSS (FSS/VSS), SAX, Tn for streams and lake

Modeling Issues to Simulate the Effects of Minerogenic Particles

- state variable options
 - TSS, Tn, PAVm, particle size
 - size class partitioning necessary
 - chemical class – possibly
 - empirical relationships with proxies, perhaps
- loads – necessary stream monitoring conducted
- in-lake patterns – resolved by monitoring conducted
- in-lake behavior/kinetics – settling, coagulation (?), multiple size classes necessary (some calibration likely)
- take advantage of UFI's Catskill reservoirs (NYC) turbidity modeling experience

Are There Management Implications of the Evolving Incorporation of Minerogenic Particles in the Phosphorus TMDL Modeling Program?

- in addition to P, the shelf is listed for silt/sediment
 - *New York State, Final 2012 Section 303(d) List Part 1 Individual Waterbody Segments with Impairment Requiring TMDL Development*

Cayuga Lake, southern end (class A) – silt/sediment source – municipal/NPS (?)
- given that the P TMDL model
 - will necessarily represent sediment loading and in-lake patterns
 - will have the capability to simulate clarity (and T_n) changes in the lake in response to scenario changes in sediment loading conditions
- will the model be used to support a TMDL analysis for silt/sediment?
Unique opportunity.