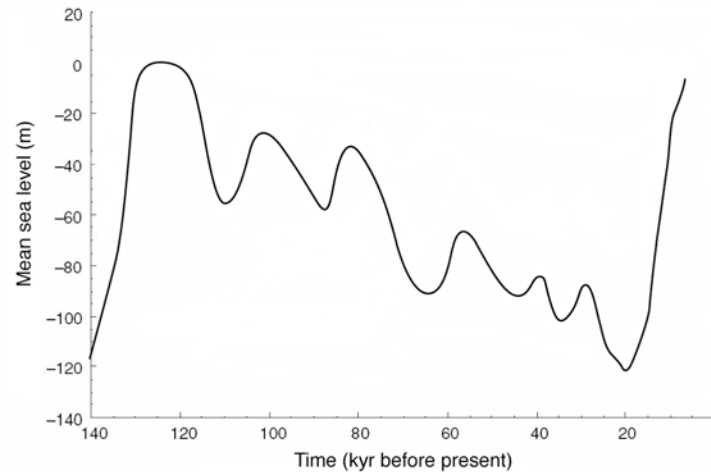


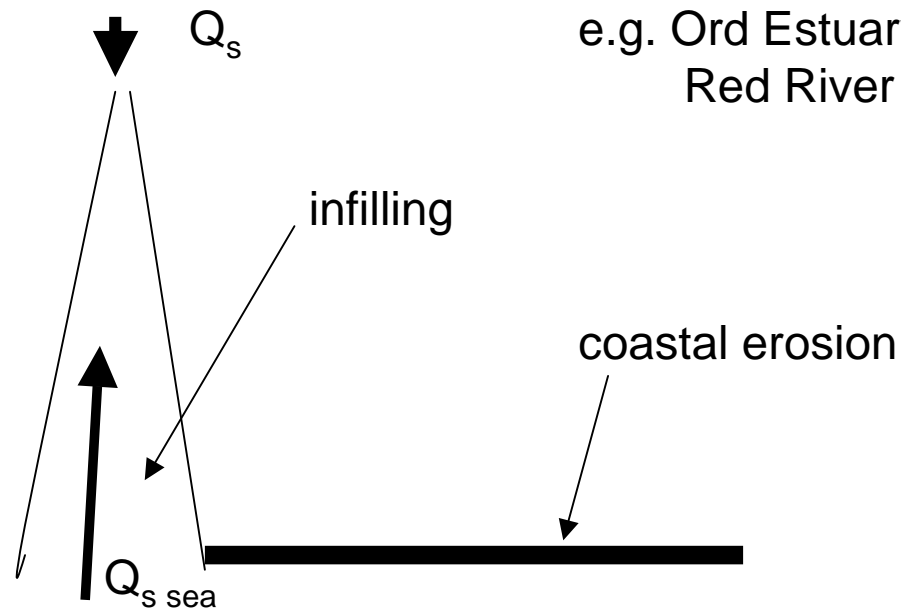
What makes an estuary change in time? What is human impact?

1. Relative sea level change

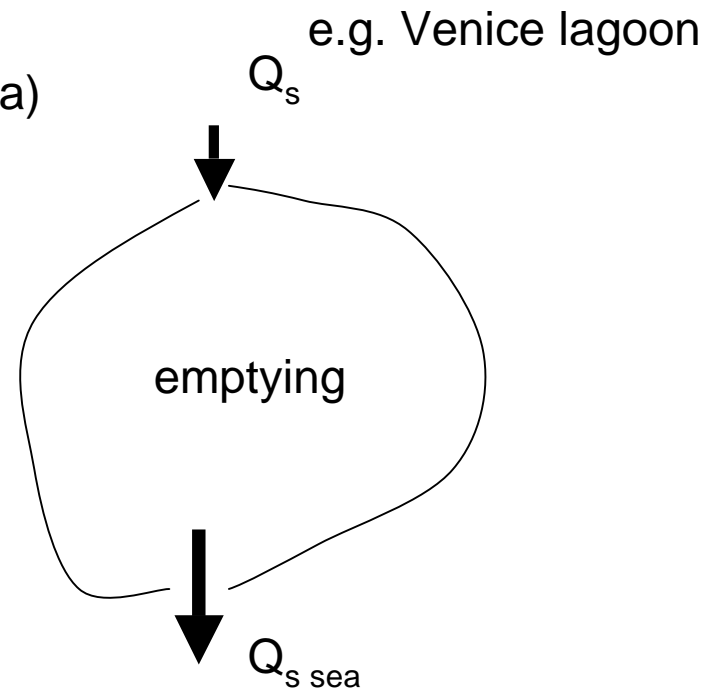


2. Change in sediment/water input from watershed

2.1. *sediment starvation (from dams)*

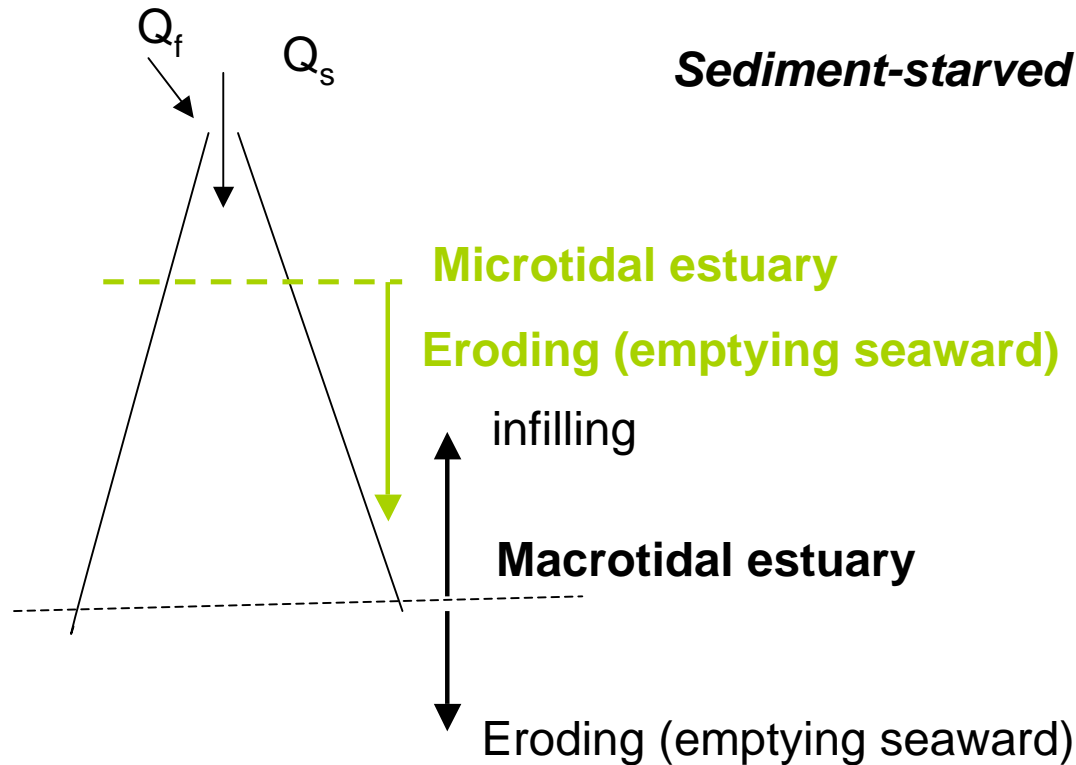


e.g. Ord Estuary (Australia)
Red River (Vietnam)



e.g. Venice lagoon

Sediment-starved estuaries (continued)



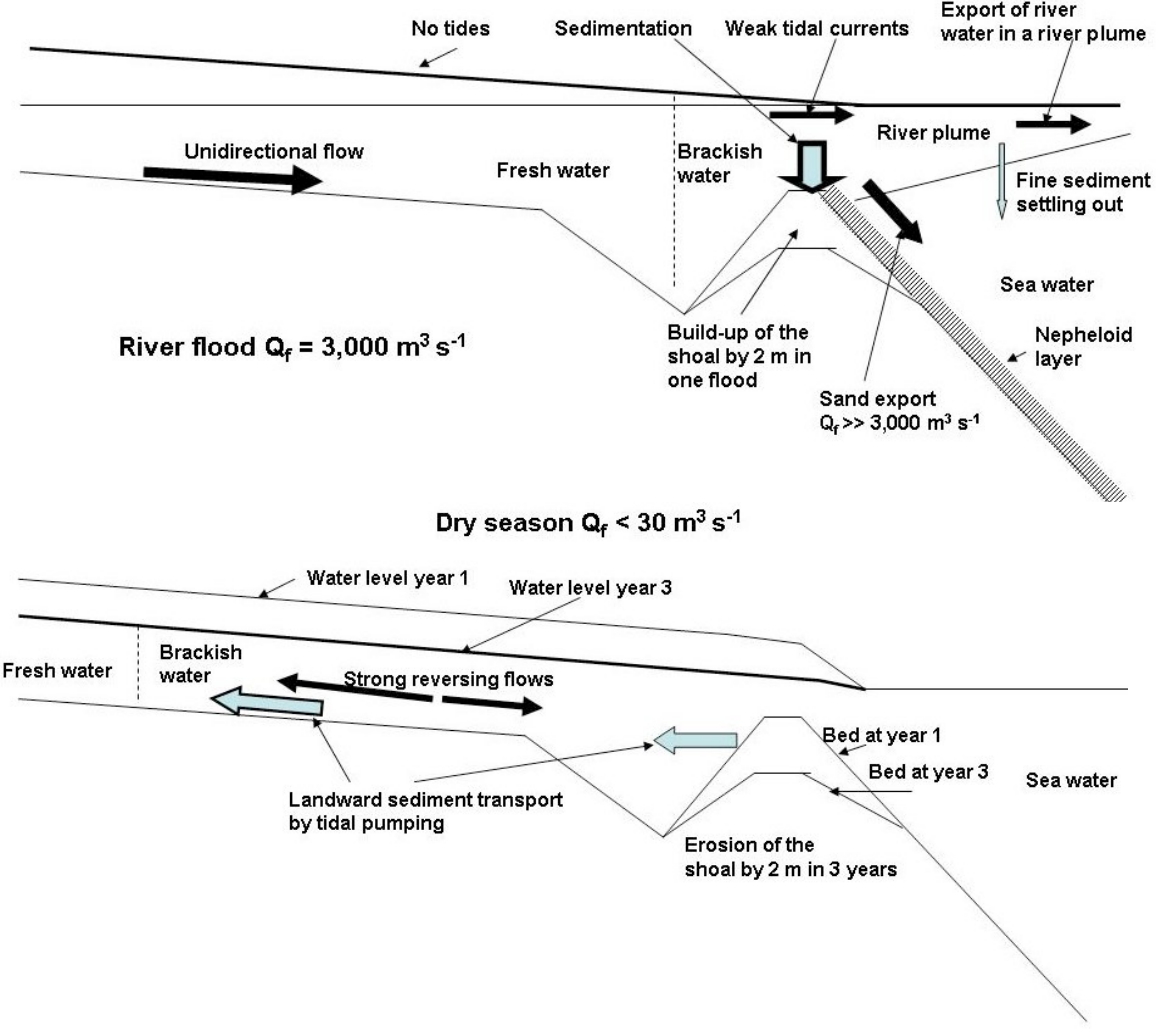
Key questions:

When do sediment-induced geomorphology changes change the overtides enough that the system can flip the net sediment flux from landward to seaward? (eg Venice, Scheldt?)

Is that a normal behaviour of an estuary, flipping 'periodically' from importer to exporter, and vice-versa?

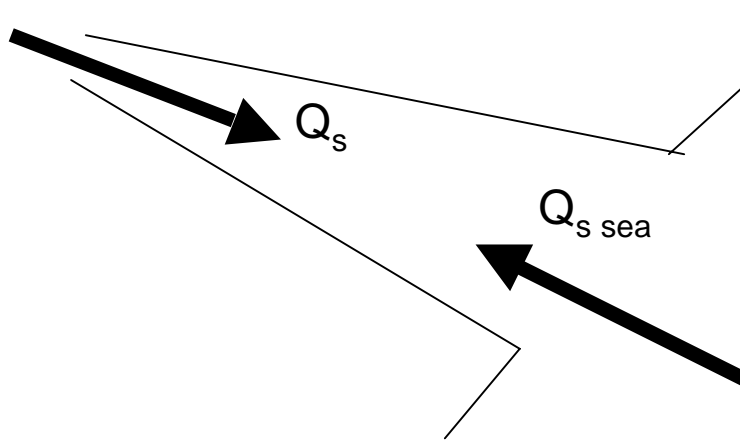
Is sediment seiching in an estuary (Humber?)? 'Bubbles' (Scheldt)?

Role of river floods

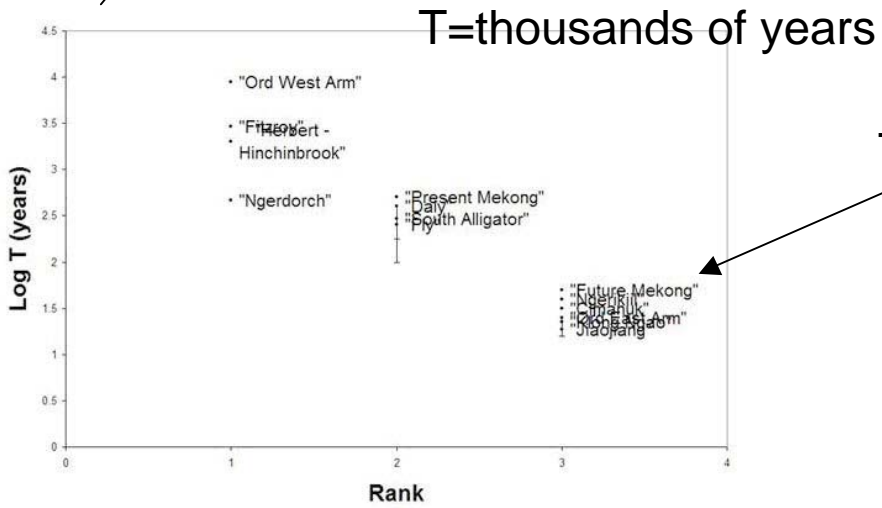


Macro-tidal estuary

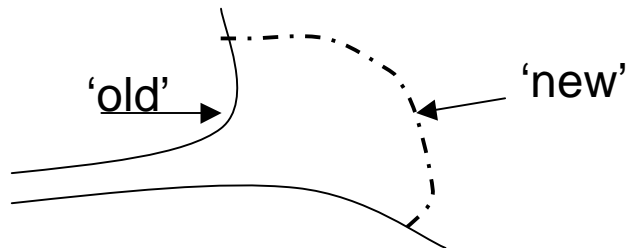
Infilling from excess sediment



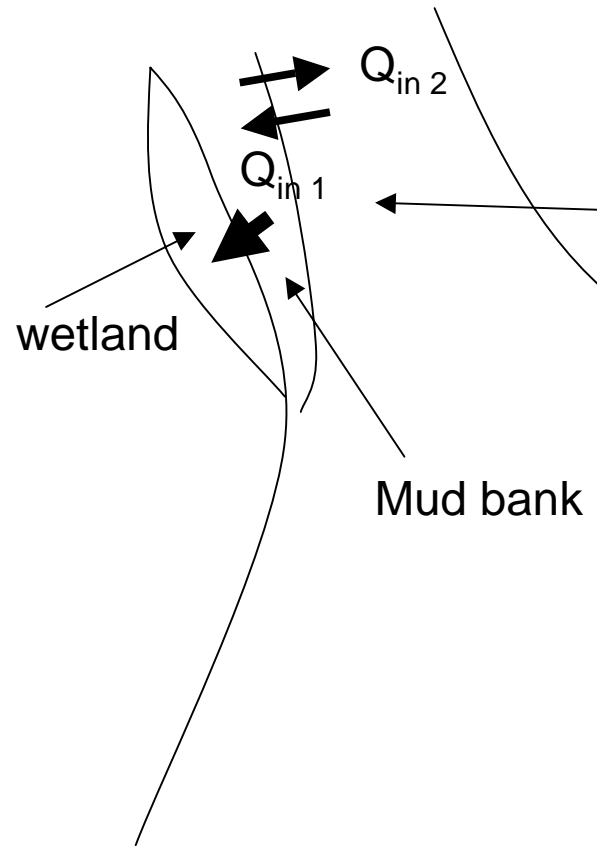
Age of an estuary:
 $T = v / (Q_s + Q_{s \text{ sea}})$



At senescence, the 'old' estuary is full. It migrates seaward to form a delta.



Infilling scenario



Influence of the biology!
-on the net budget
-on the flocculation

