

# The preservation of sediment supply in deltas

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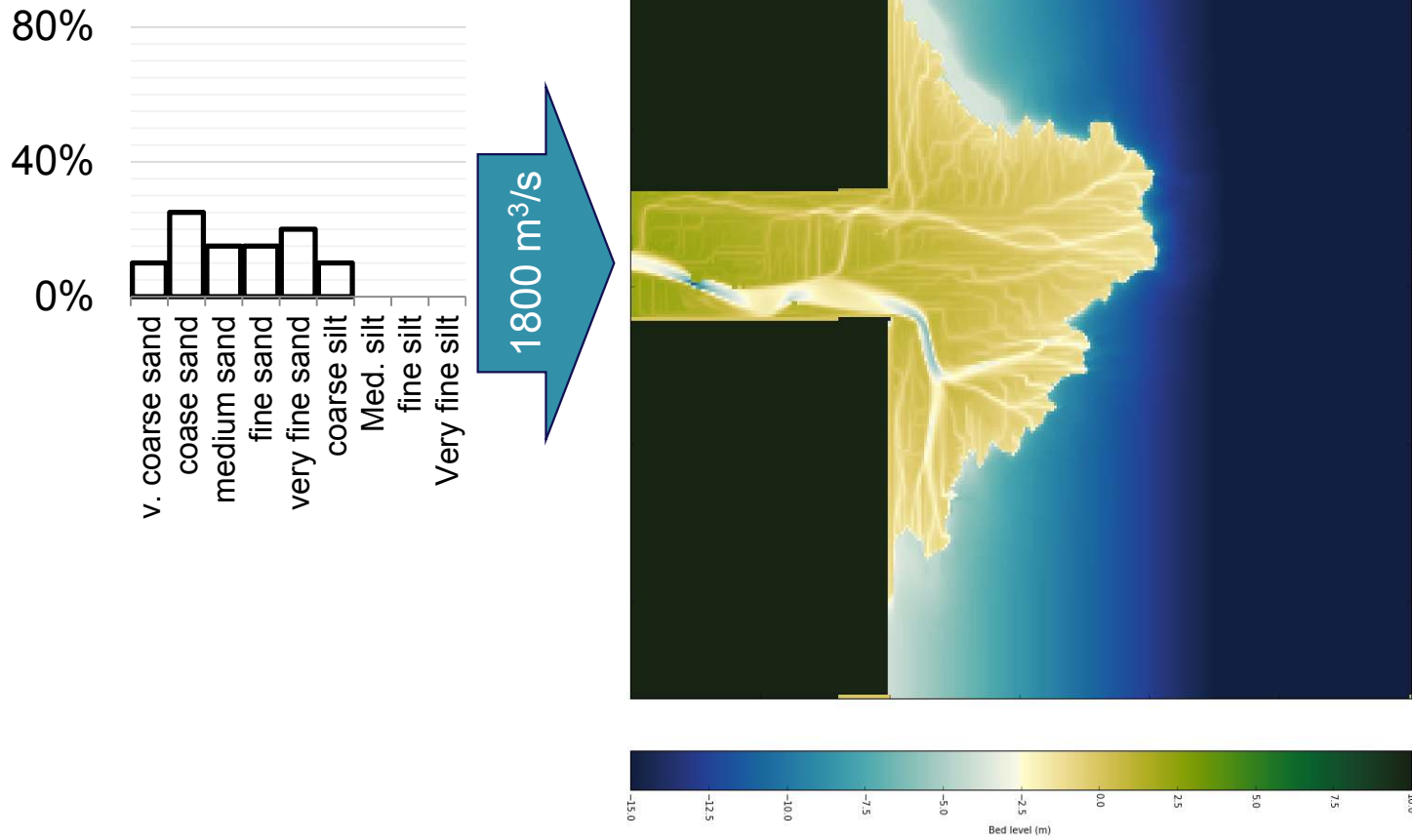
**1. Filling a basin**

**2. Sediment partitioning in delta deposits**

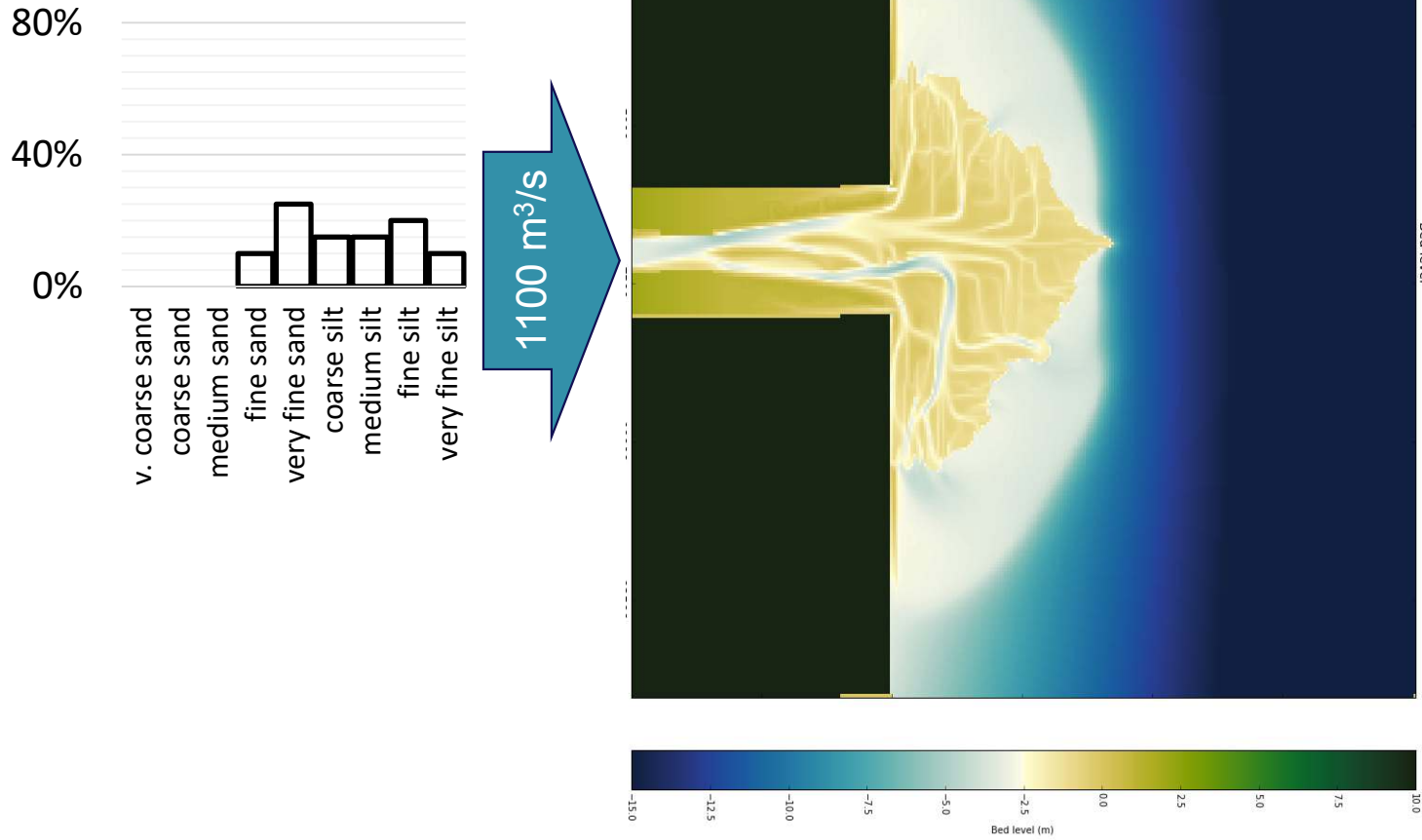
**3. Preserving heterogeneity**

# 1. Filling a basin

# Morphology – coarse sand delta



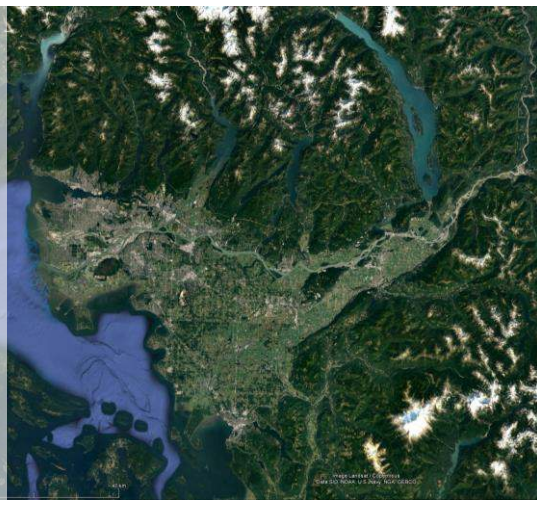
# Morphology – very fine sand delta



Alta river delta, Norway



Fraser river delta, Canada



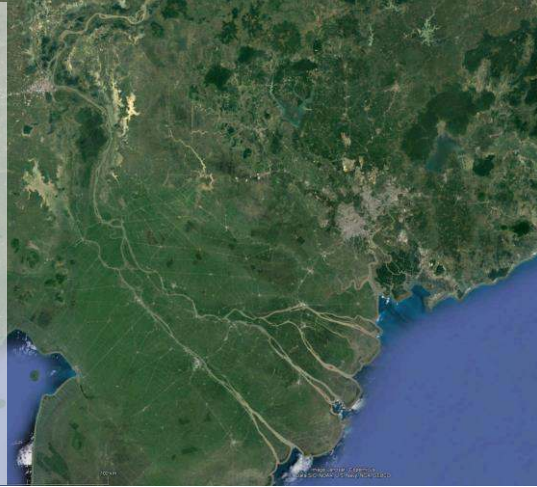
Niger river delta, Nigeria



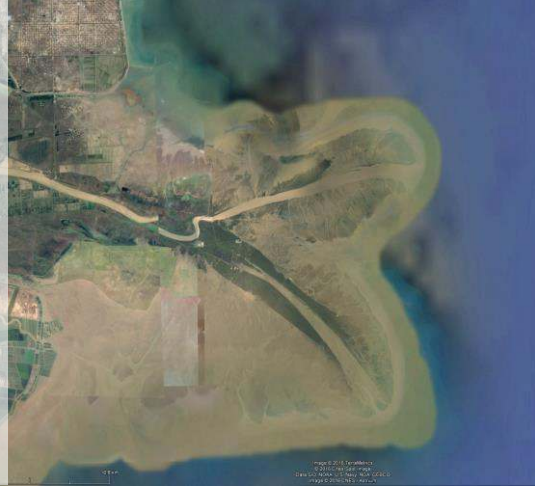
Wax lake and Atchafalaya delta, USA



Mekong river, Vietnam



Yellow river, China

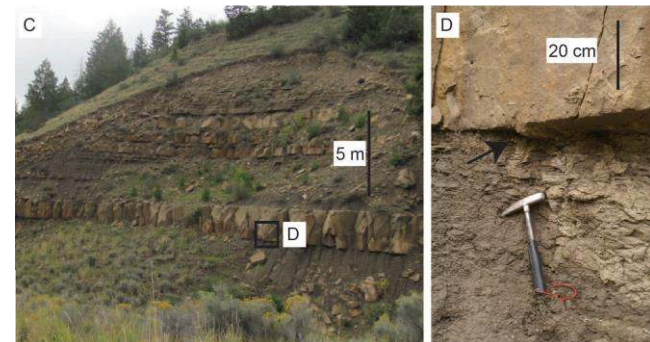




Ferron Sandstone (Howell et. al. 2008)



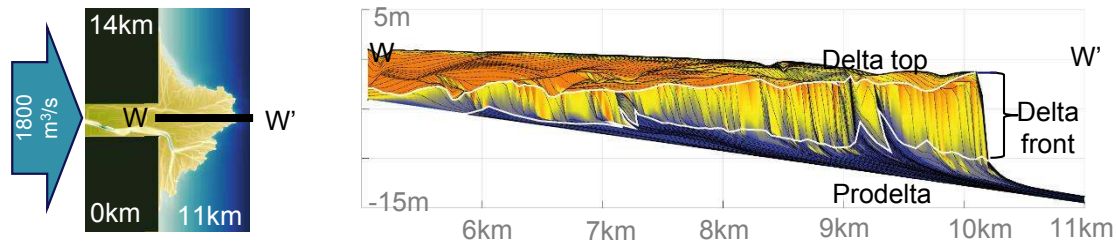
Drumheller Mbr (Ainsworth et. al 2016)



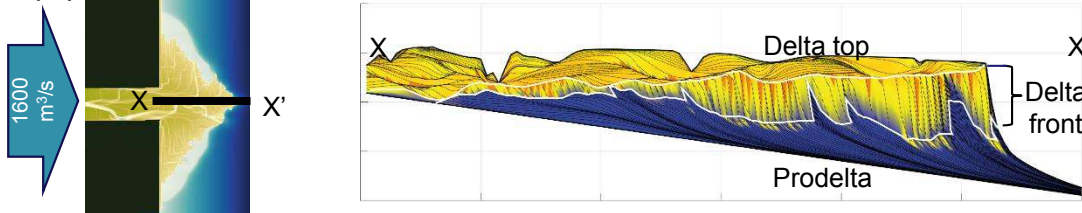
## 2. Sediment partitioning in delta deposits



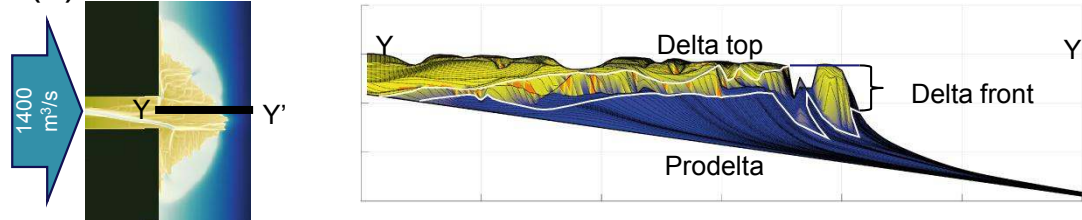
(a) Coarse sand



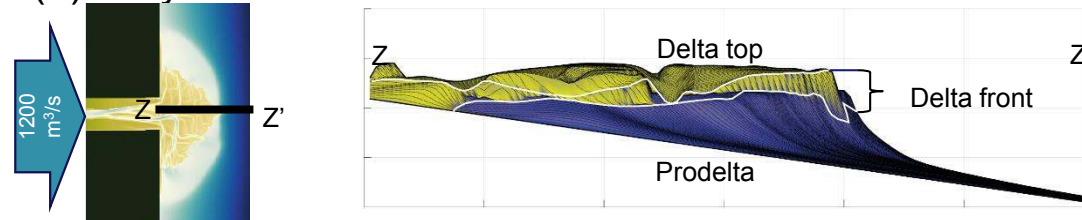
(b) Medium sand



(c) Fine sand



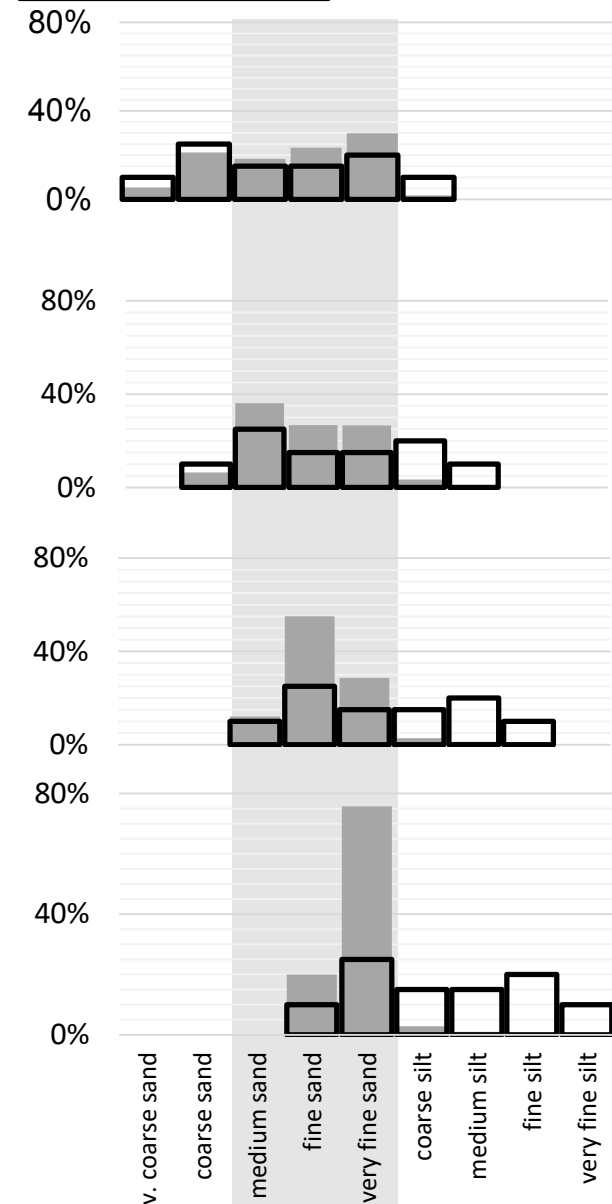
(d) Very fine sand



10 -15  
Depth (m)



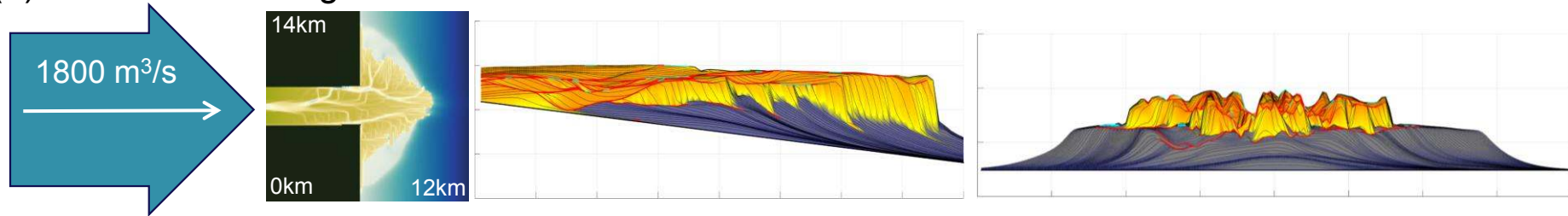
Supply composition Delta front composition



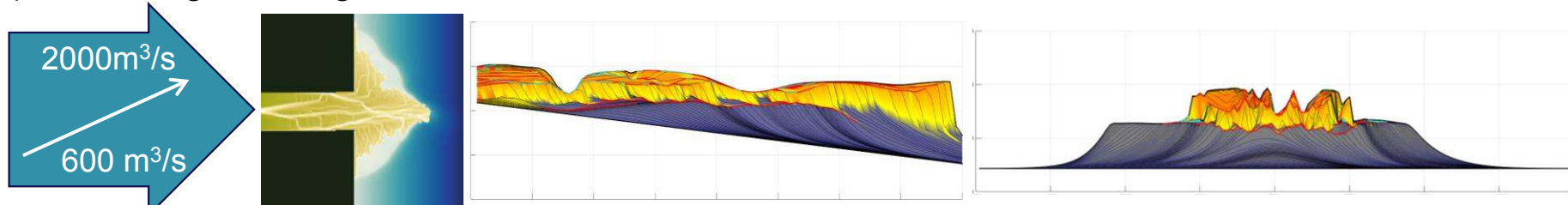
**Grain size classes amplified in mouth bar deposits**

## 3. Preserving heterogeneity

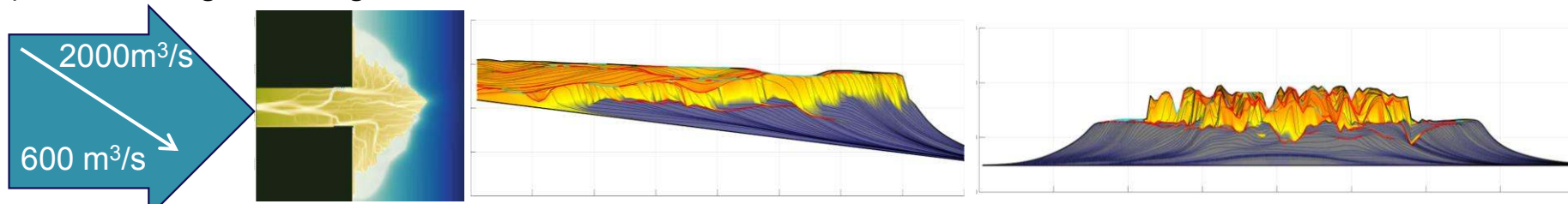
(a) Constant discharge



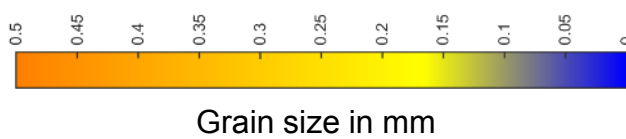
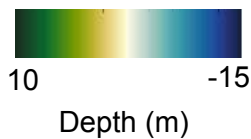
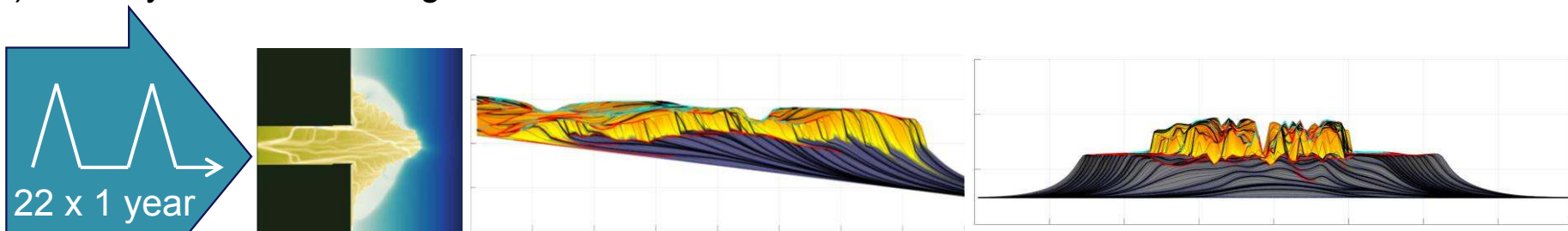
(b) Increasing discharge



(c) Decreasing discharge



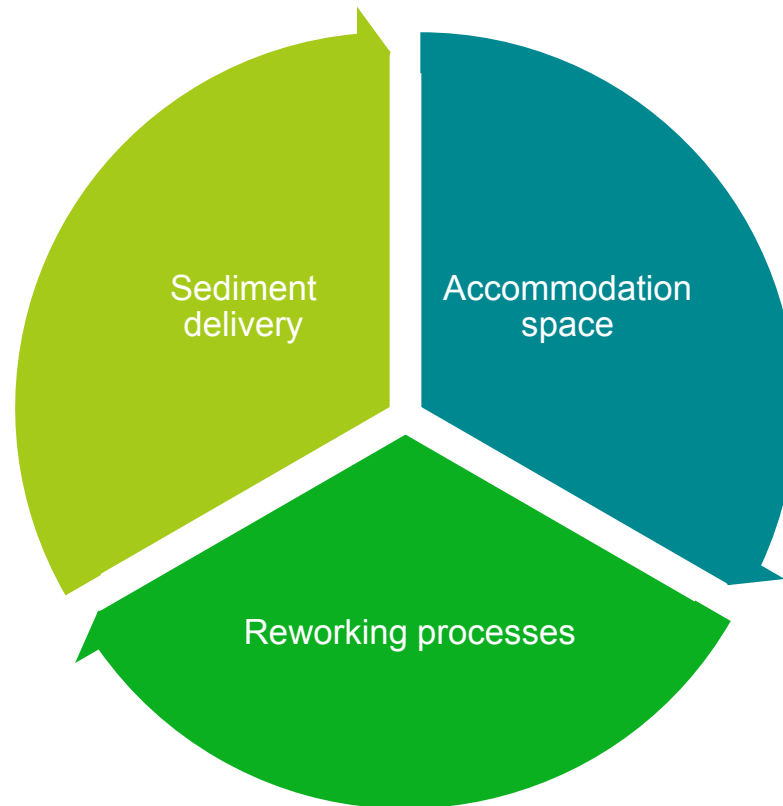
(d) Wet-dry season discharge



Erosion surface

Thin bed of fine, cohesive sediment<sup>11</sup>

# Filling a basin



## Sediment partitioning and depositional heterogeneity