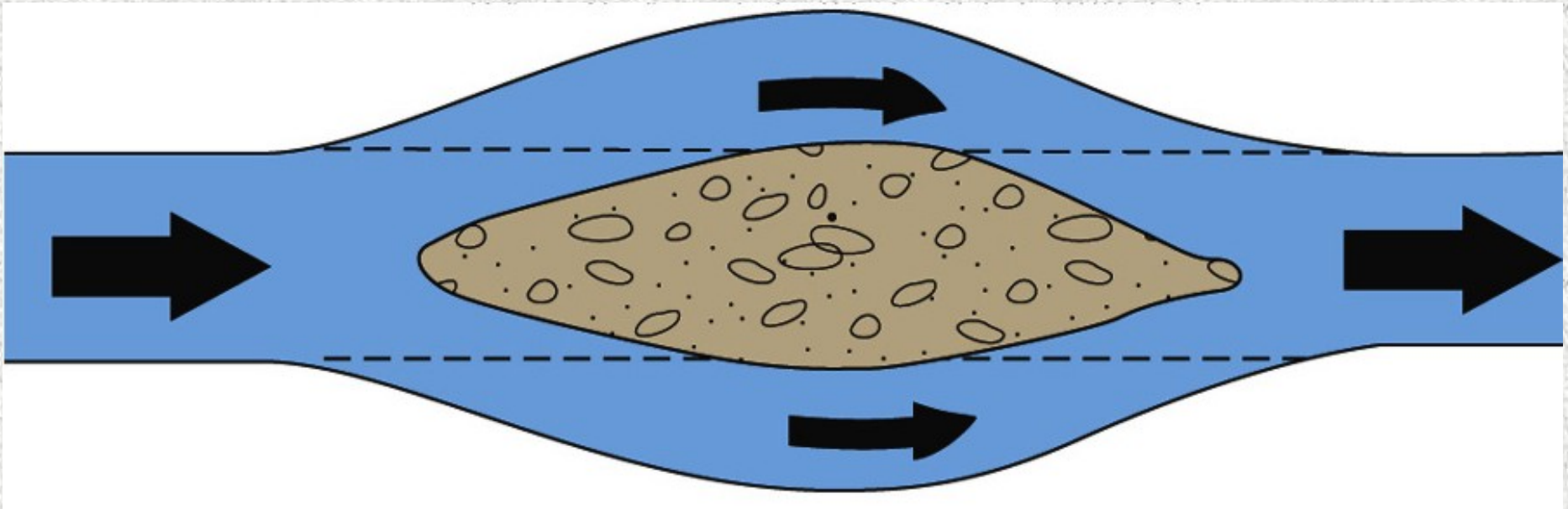
Fluvial systems

Two primary types:
- braided rivers
- meandering rivers

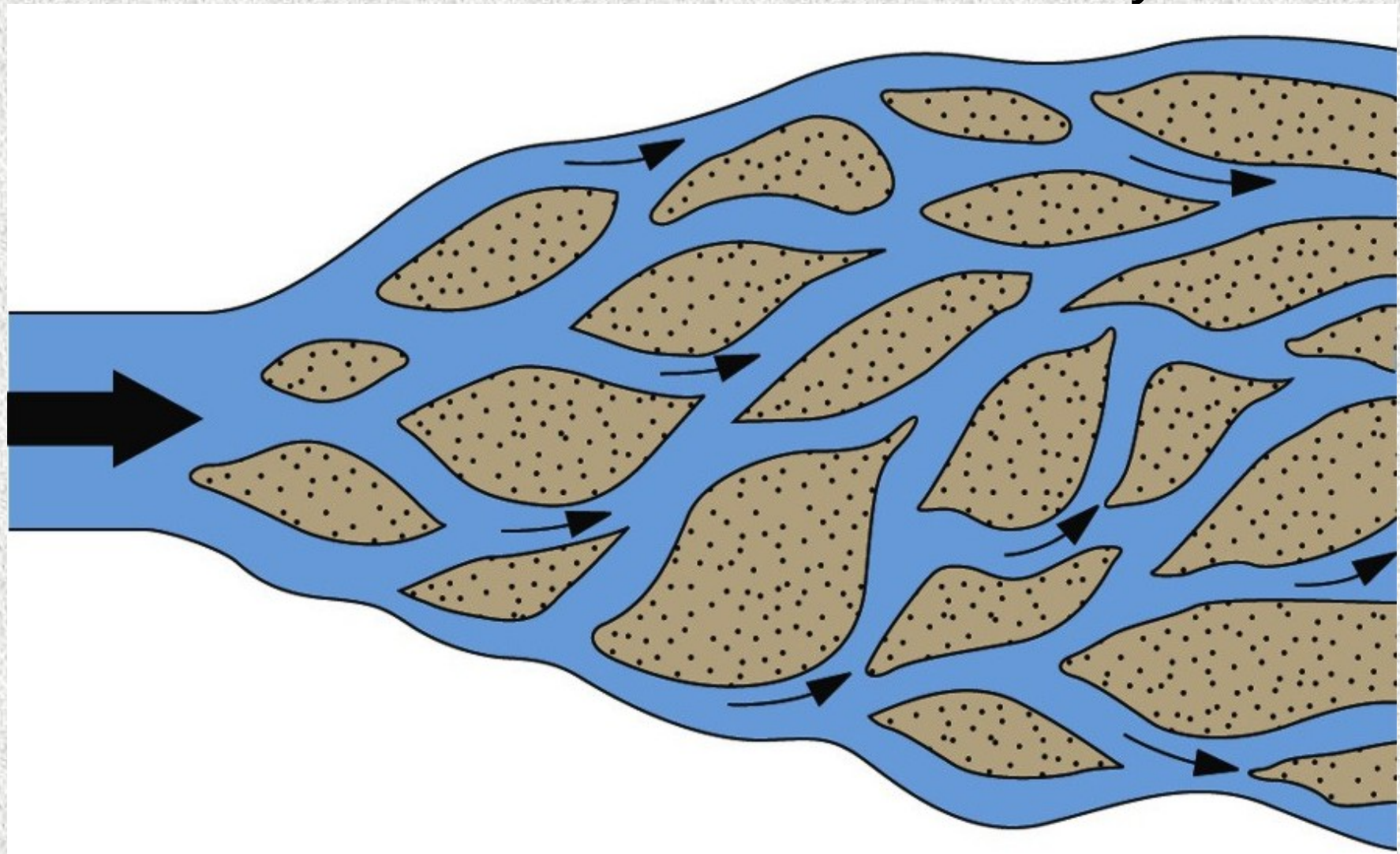
but these intergrade, and a single river will change character downstream

Longitudinal bar

Coarse sediments deposited during high flow become a barrier at low flow



Braided river,
with multiple channels and bars
more sediment than water to carry it



Braided-river systems

Characteristics:

- moderately steep grade
- fairly straight
- many channels, bars, and islands
- coarse-grained sediments

Braided rivers

Factors:

- overloaded with coarse sediment
- sporadic, high-discharge events
- non-cohesive banks
  (channels migrate laterally instead of incising)

Typical settings

Mountainous reaches of rivers

Glacial outwash plains

Outer edge of alluvial fans

Mountainous reaches of rivers

Spring high discharge

Gravelly braided rivers

- areas of high relief
- usually limited length
- abrupt decrease in grain size at base of steep slope

Glacial outwash plain

Copper River, Alaska

Source of glacial outwash plain

Glacial outwash / braided river transitional

Southwest Alaska

Braided, wide valley

Rakaia River, New Zealand

Braided / meandering transition

Russian River, California

Longitudinal bars

deposition of coarse bedload that blocks flow

Toutle River, Washington after eruption of Mt. St. Helens

Toutle River