

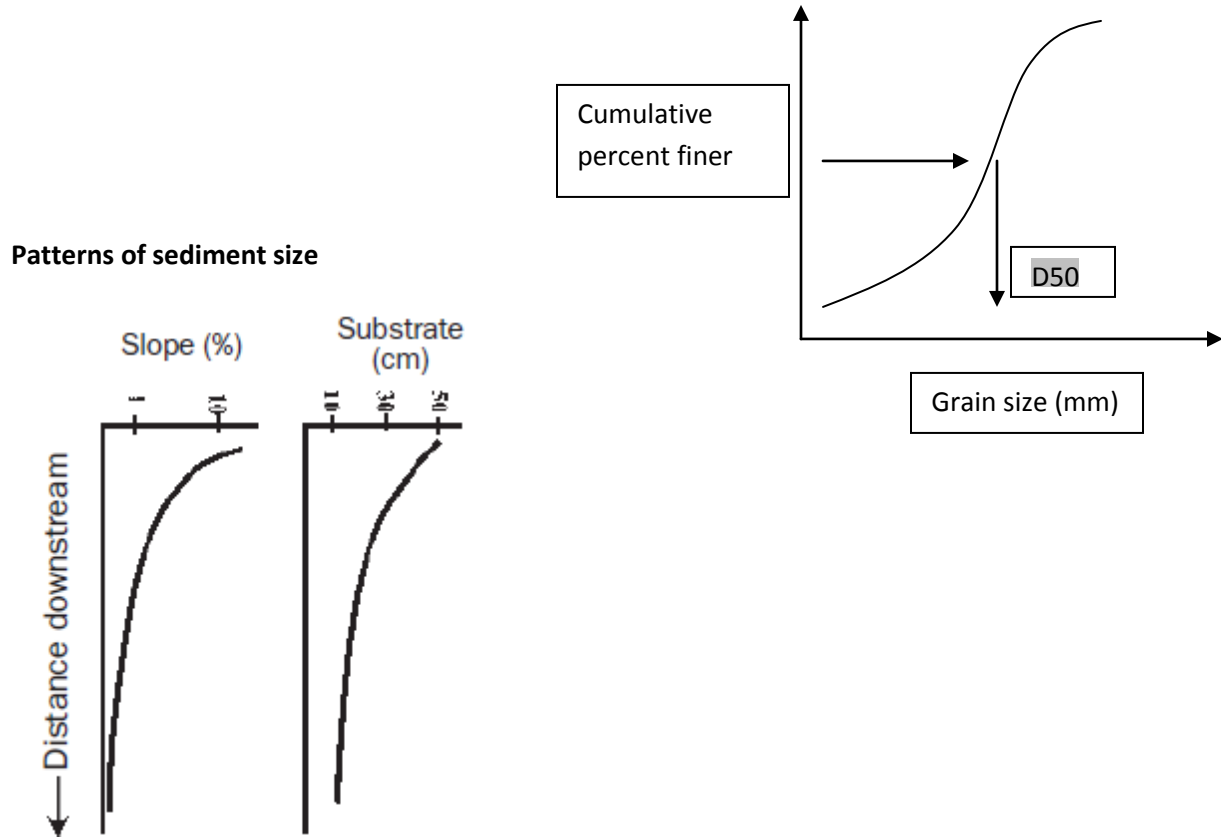
## STREAM ECOLOGY

### PHYSICAL: Sediment

Sediments control streams, their change through time, and provide habitat for organisms. Human activities can dramatically alter sediment dynamics in streams.

#### How to quantify sediment:

D50—the median diameter of sediment in a location



Generally, sediments are larger higher up in watersheds and finer lower in watersheds (see figure above).

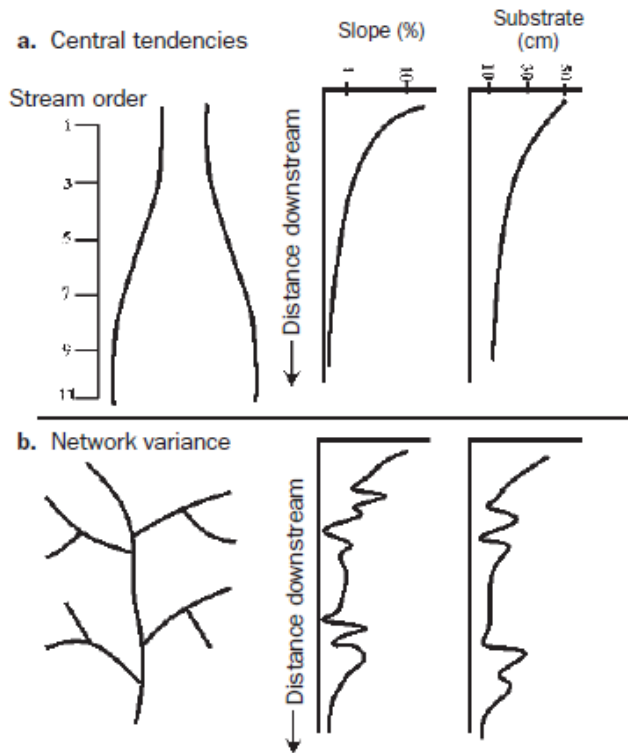
This pattern is caused by:

1. Progressive breakdown of sediments—streams and rivers wear down and break sediments.
2. Higher gradients high up in the watershed

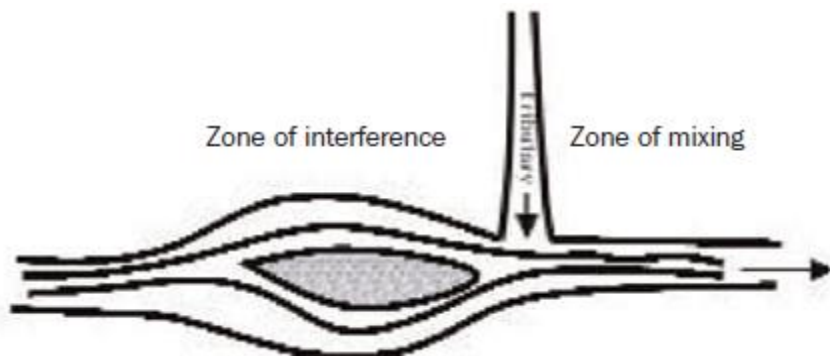
*Question: Why does gradient matter?*

**Tributaries add sediments**

- Disconnect in size of tributary vs. size of mainstem
- Adds spatial and temporal complexity



Benda et al. 2004



## STREAM ECOLOGY

Sediments are constantly changing, driven by small and large inputs of sediments.

e.g., landslides. One event can fundamentally change a river. These impacts will be propagated downstream through time.

### **Human activities on sediments**

Human activities can either increase or decrease sediments.

- Increase.--Human activities such as logging and road building increase erosion from the land, increasing fine sediments in streams.
- Decrease.—Dams trap sediments