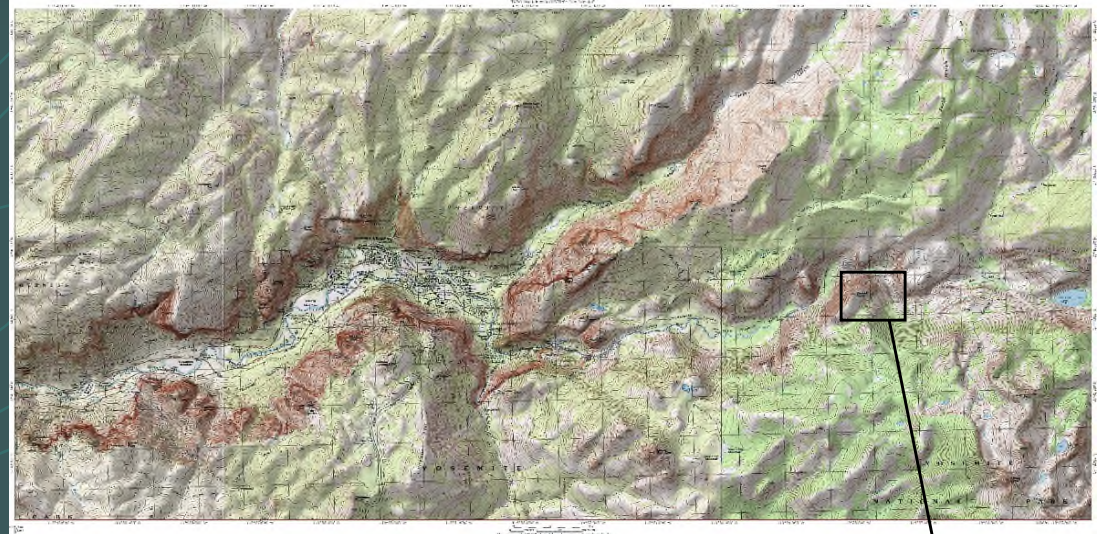
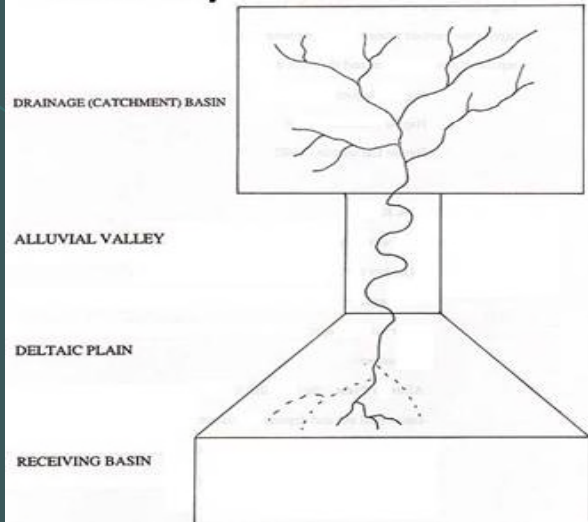


River Systems and Flooding



Anatomy of a River Basin



EOSC 105 – Natural Disasters

Ray Rector: Instructor

A vertical strip on the left side of the slide showing a portion of a topographic map. It features contour lines, a river, and a road. The map is oriented vertically, with the river flowing downwards.

Today's Lab Activities

- 1) Discussion of Last Week's Topo Map Lab
- 2) Finish Topographic Map Profiling
- 3) Focus on River Systems
 - Stream Drainages
 - Types of River Channels
 - Stream Gradients and Profiles
 - Flooding
- 4) River Stream Table Modelling
- 5) Preparation for Next Week's Structure Lab

A vertical strip on the left side of the slide shows a topographic map of a river valley. It features contour lines, a river channel, and some infrastructure like roads and bridges. The map is oriented vertically, with the river flowing from top to bottom.

Purpose of Today's Lab

- 1) Become familiar with the fundamentals of river systems and fluvial landforms
- 2) Model stream flow with stream table.

Learning Outcomes

When you are finished today, you should be

- 1) familiar the concepts of stream anatomy, drainage systems, stream gradient, stream-flow characteristics, and floods and river management.
- 2) able to identify fluvial landforms – natural and man-made
- 3) able to successfully measure stream flow
- 4) Correctly assess human-related impacts on urban stream systems

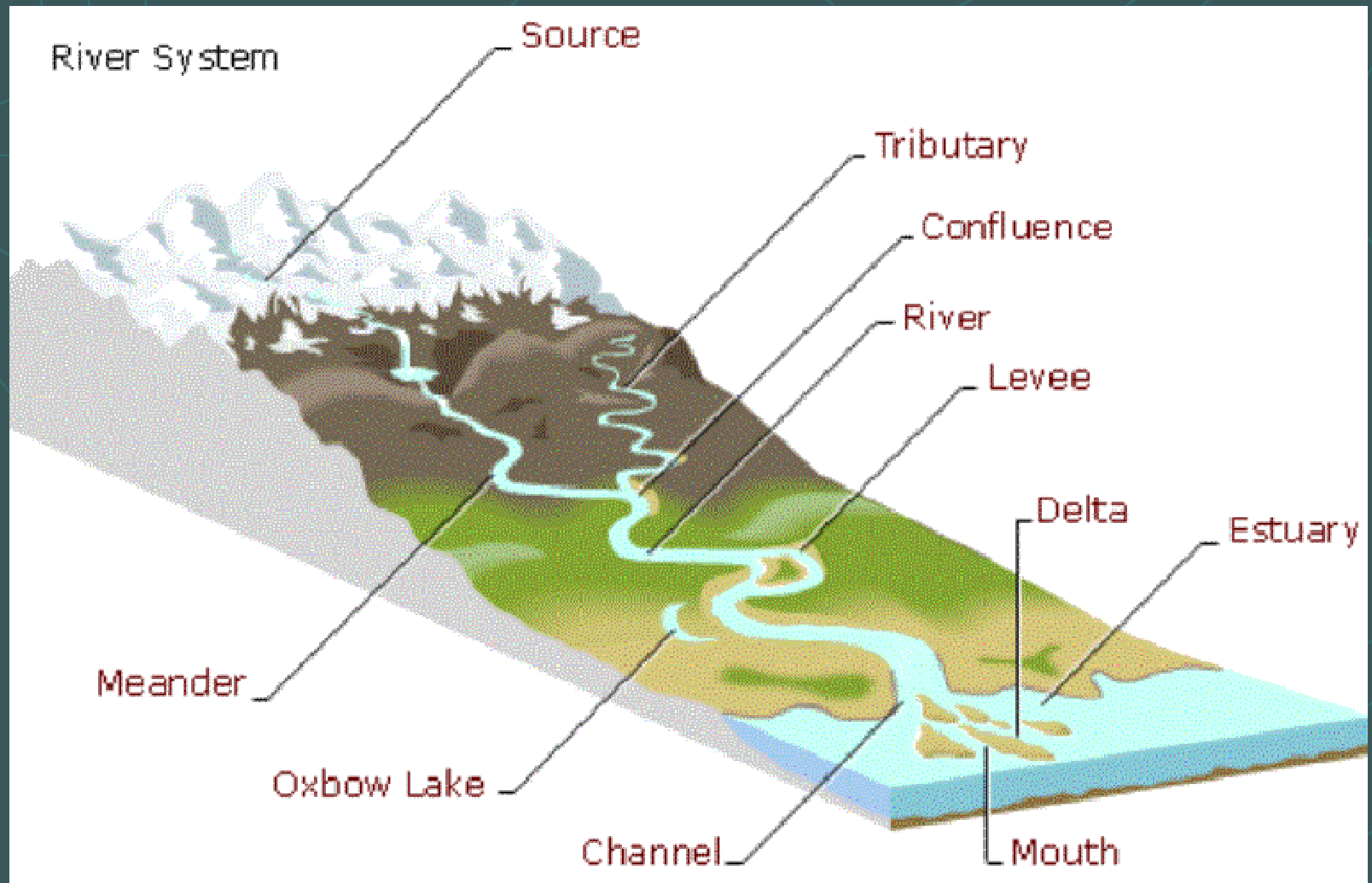
A vertical strip on the left side of the slide shows a topographic map of a river valley. It features contour lines, a river channel, and a yellow line indicating a specific path or boundary.

River Systems and Floods

- **Types of River Channelization**
- **The Drainage Basin System**
- **Drainage Basin Patterns**
- **Fluvial Processes and Landscapes**
- **Streamflow Characteristics**
- **Floods and River Management**



Overview of a River System



A Drainage Basin

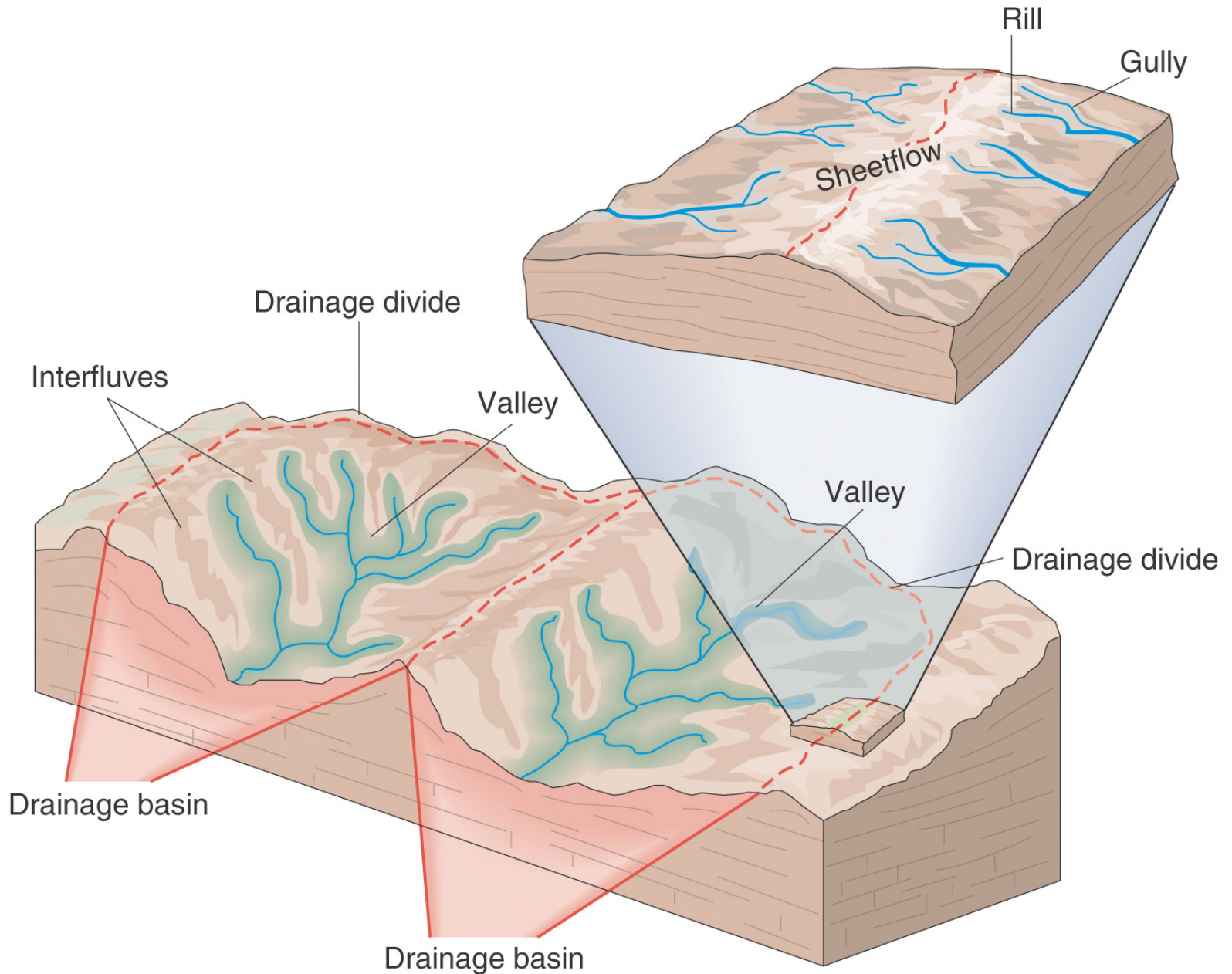


Figure 11.4

Drainage Patterns

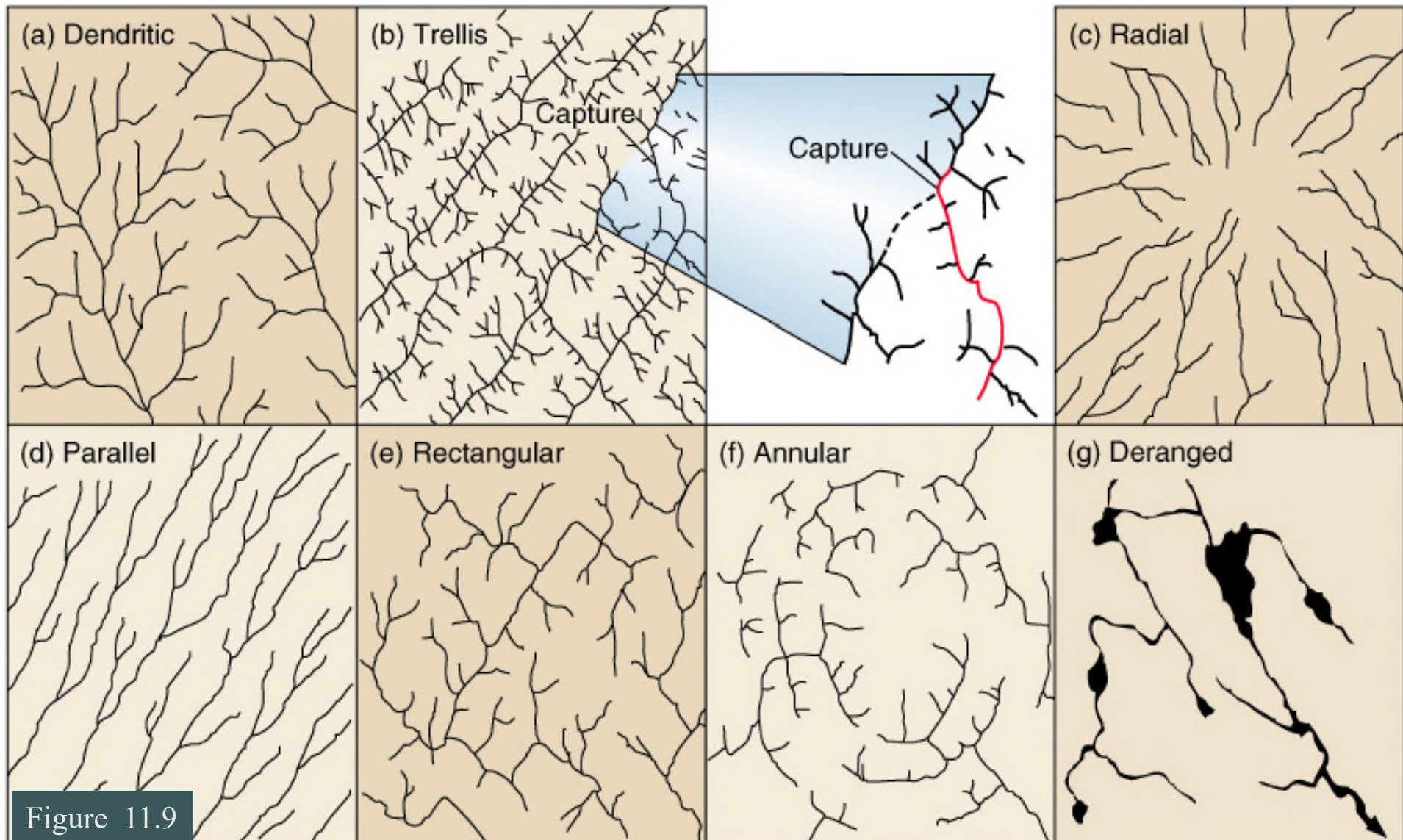
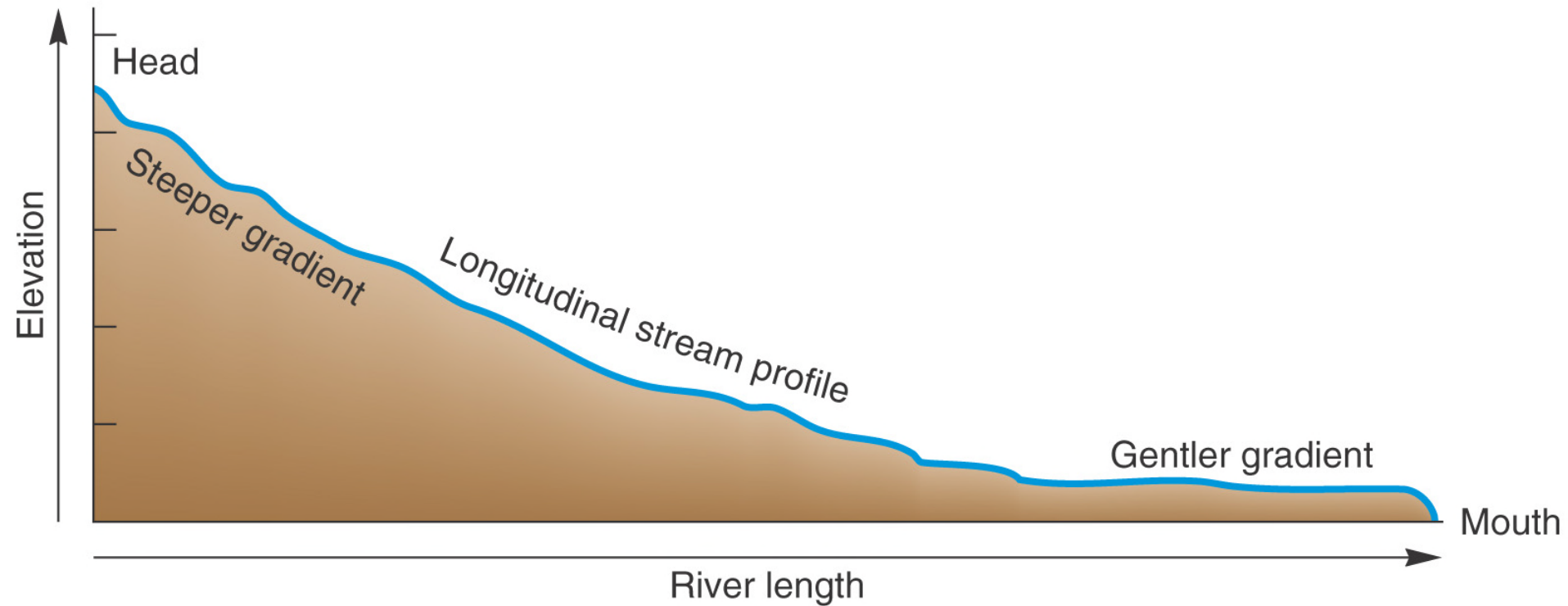


Figure 11.9

Stream Longitudinal Profile



Base Levels

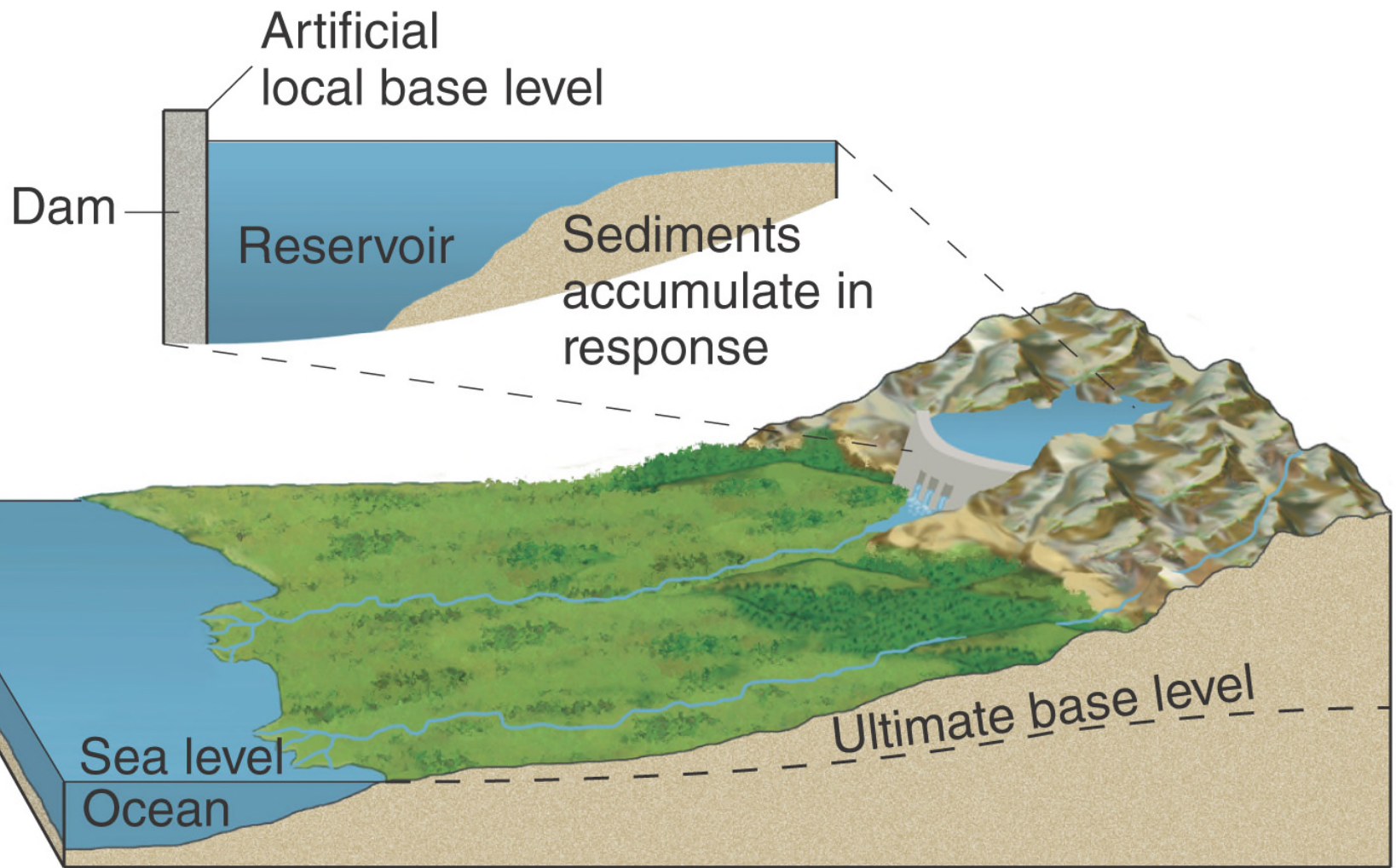
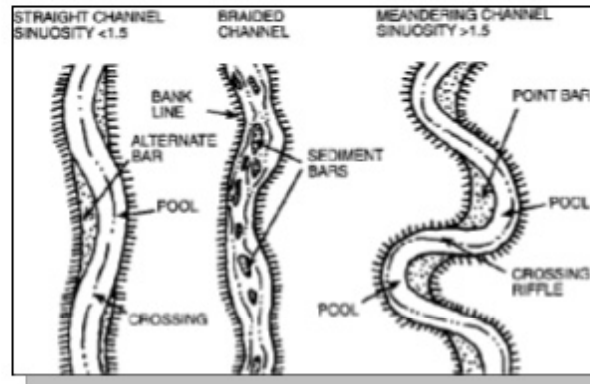


Figure 11.3

Types of River Channels

Channel types



- (a) Straight channel
- (b) Braided channel
- (c) Meander channel

A vertical strip on the left side of the slide shows a topographic map of a river valley. The map features contour lines, a river channel, and a yellow line indicating a specific path or boundary.

Streamflow Characteristics

- Stream Erosion
- Stream Transport
- Flow and Channel Characteristics
- Stream Gradient
- Nickpoints
- Stream Deposition

Three Primary River Processes

RIVER PROCESSES:

- Three river processes:
- 2. Transportation
- 3. Deposition
- 4. Erosion

Fluvial Transport

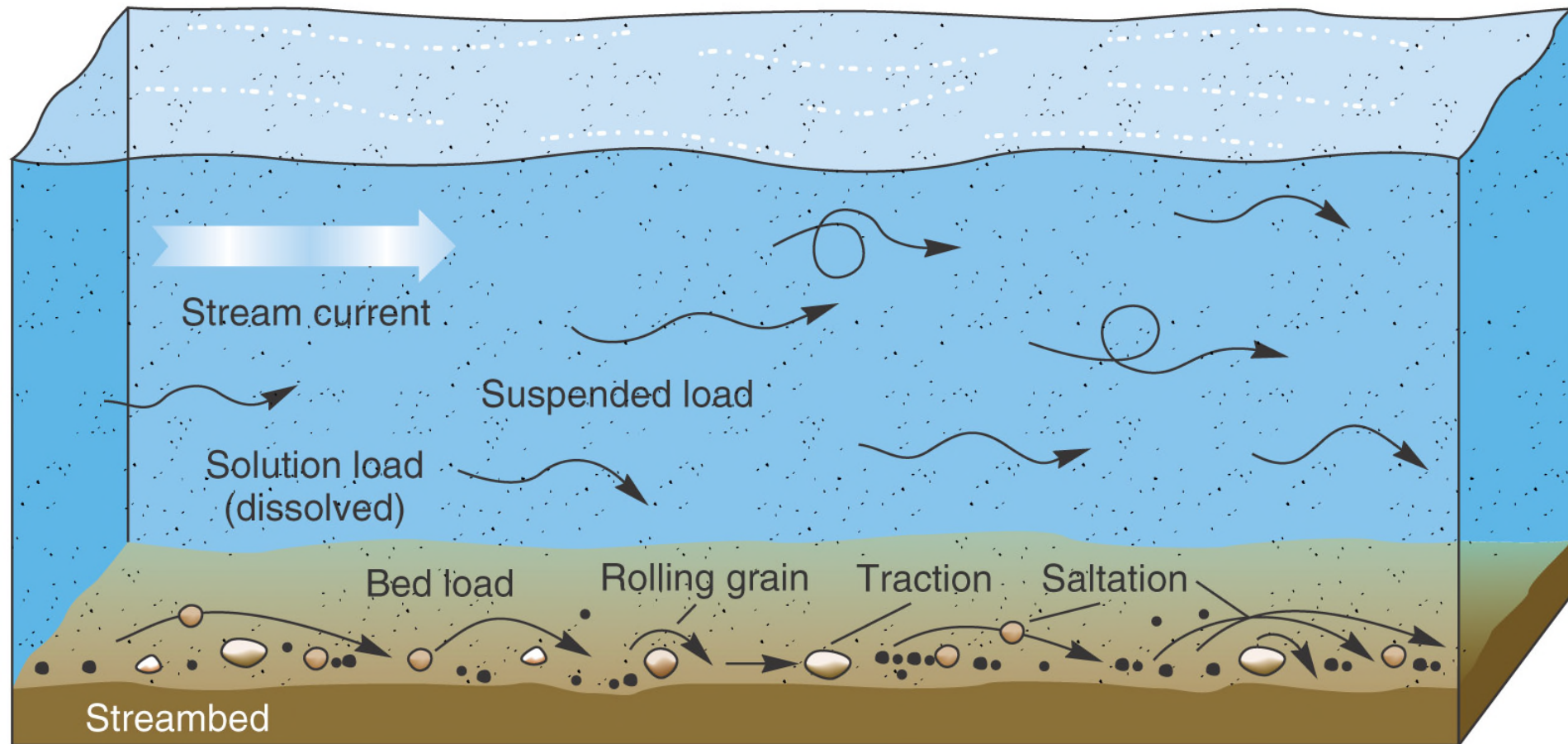


Figure 11.12

Stream Channel Flood Response

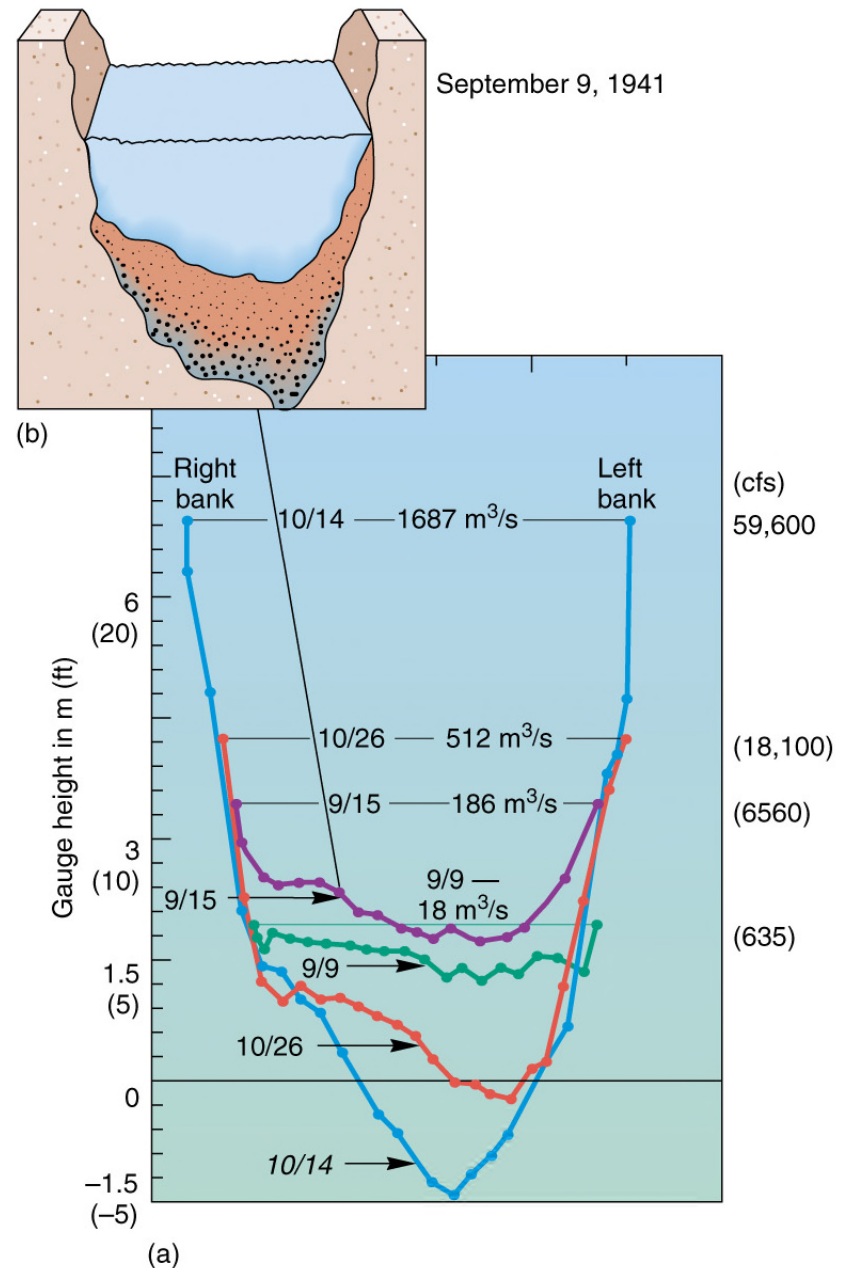


Figure 11.10

River System Features

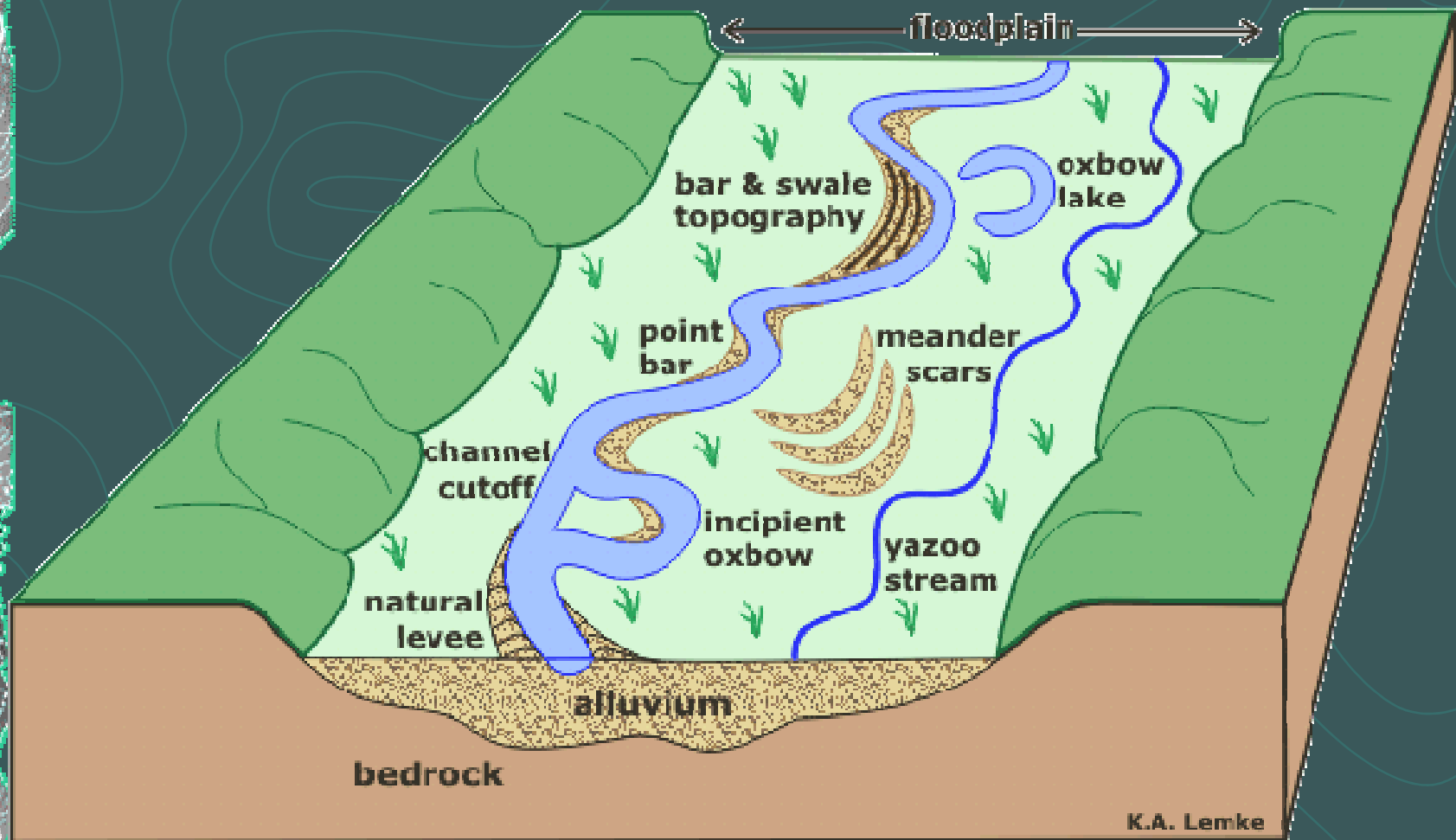


Figure 11.21

Floodplain Features

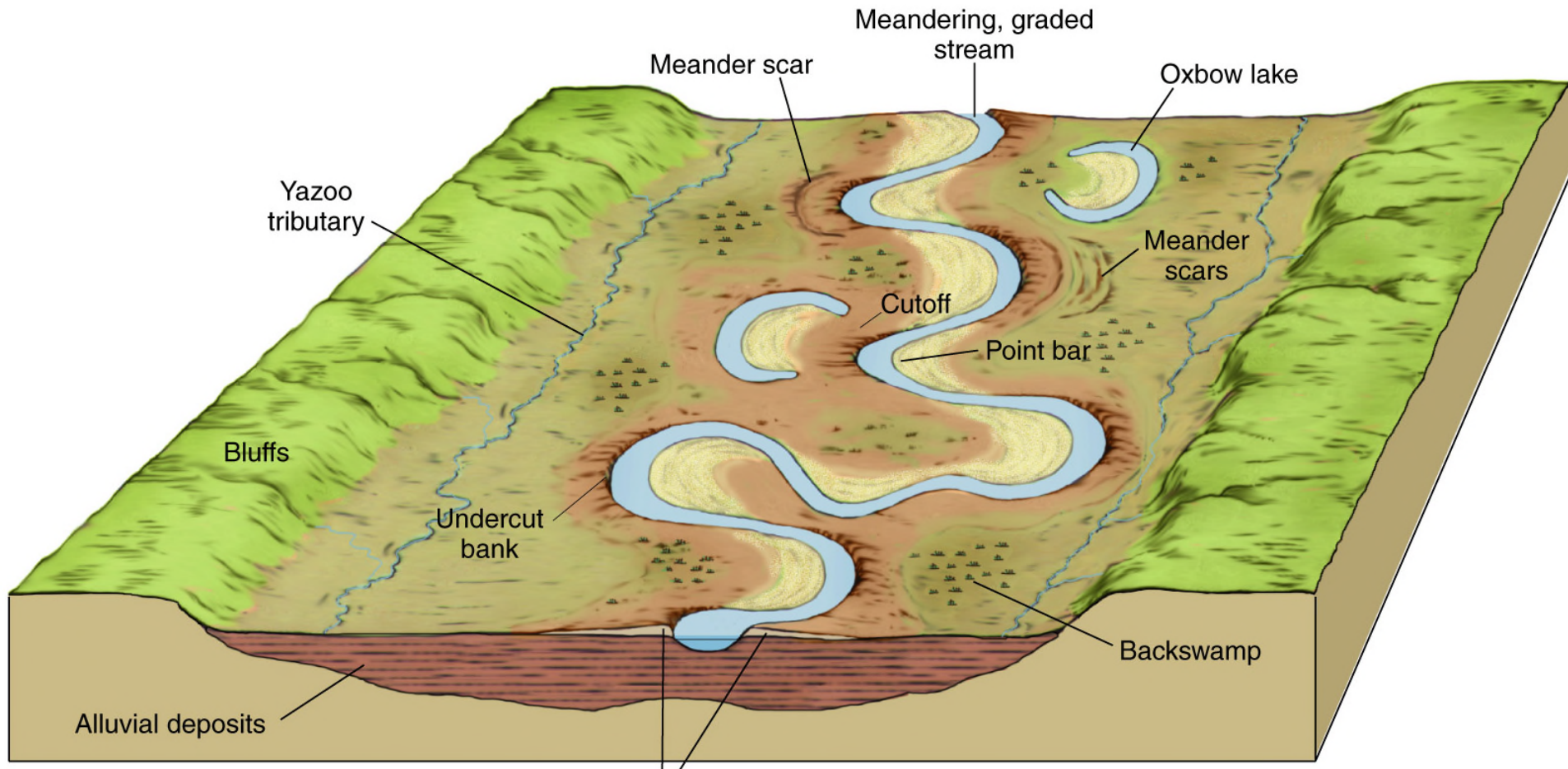
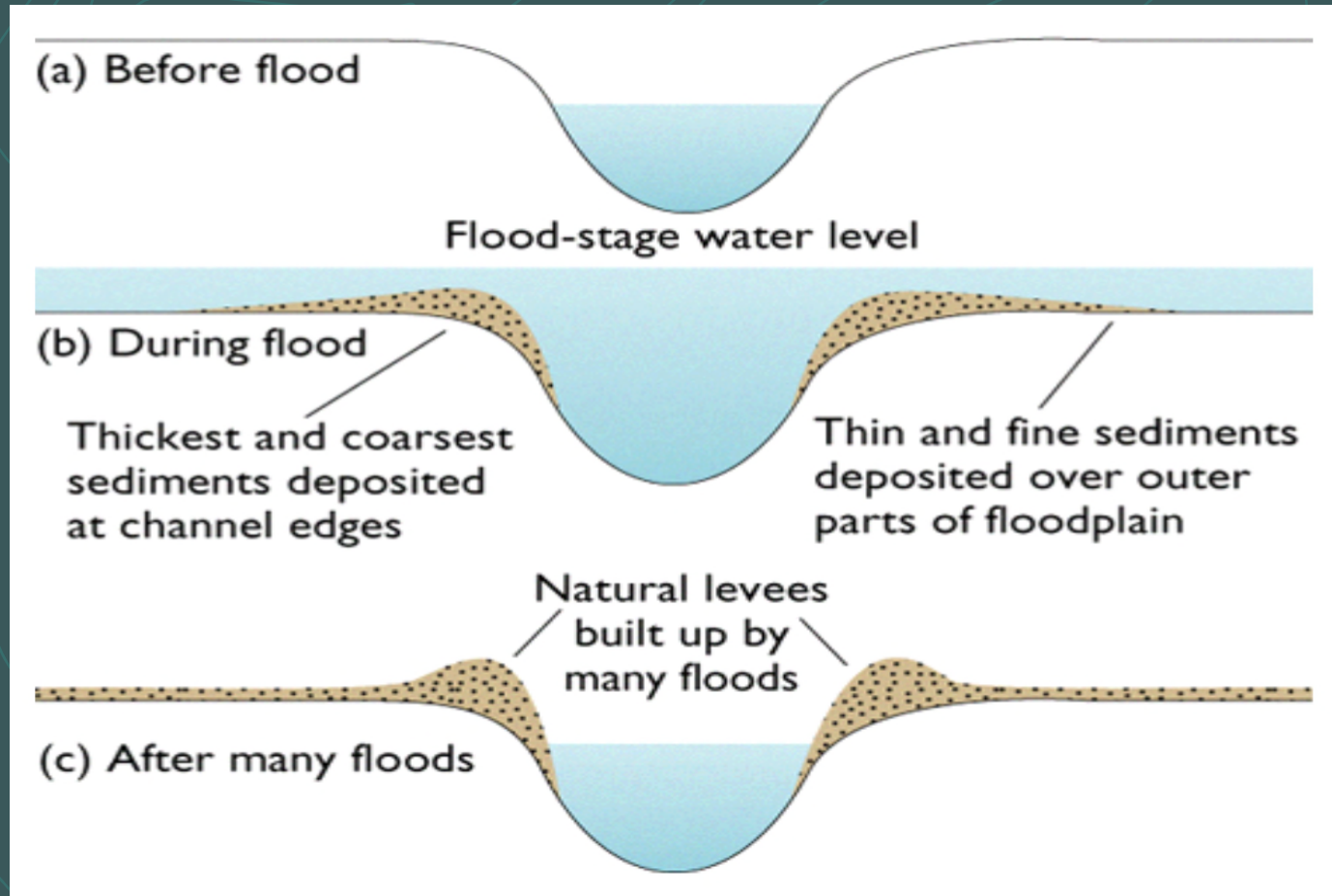


Figure 11.21

Floods and River Management

- Floods and Floodplains
- Streamflow Measurement



Streamflow Measurement

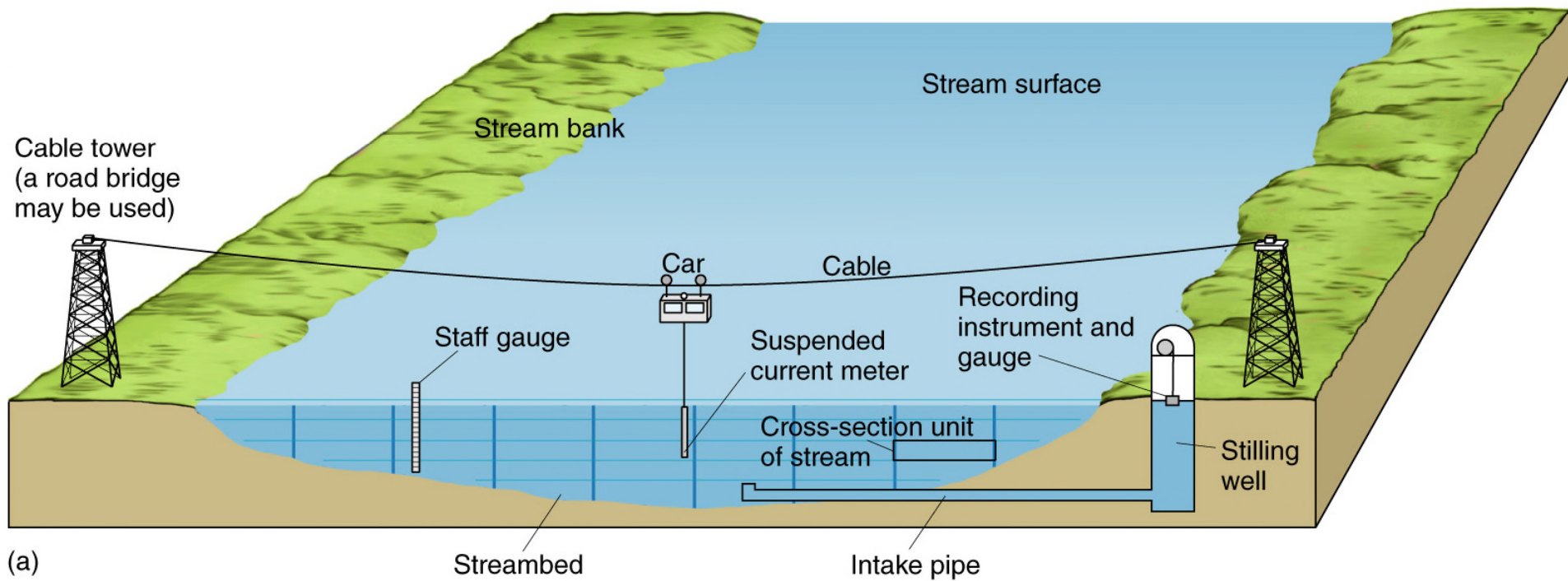
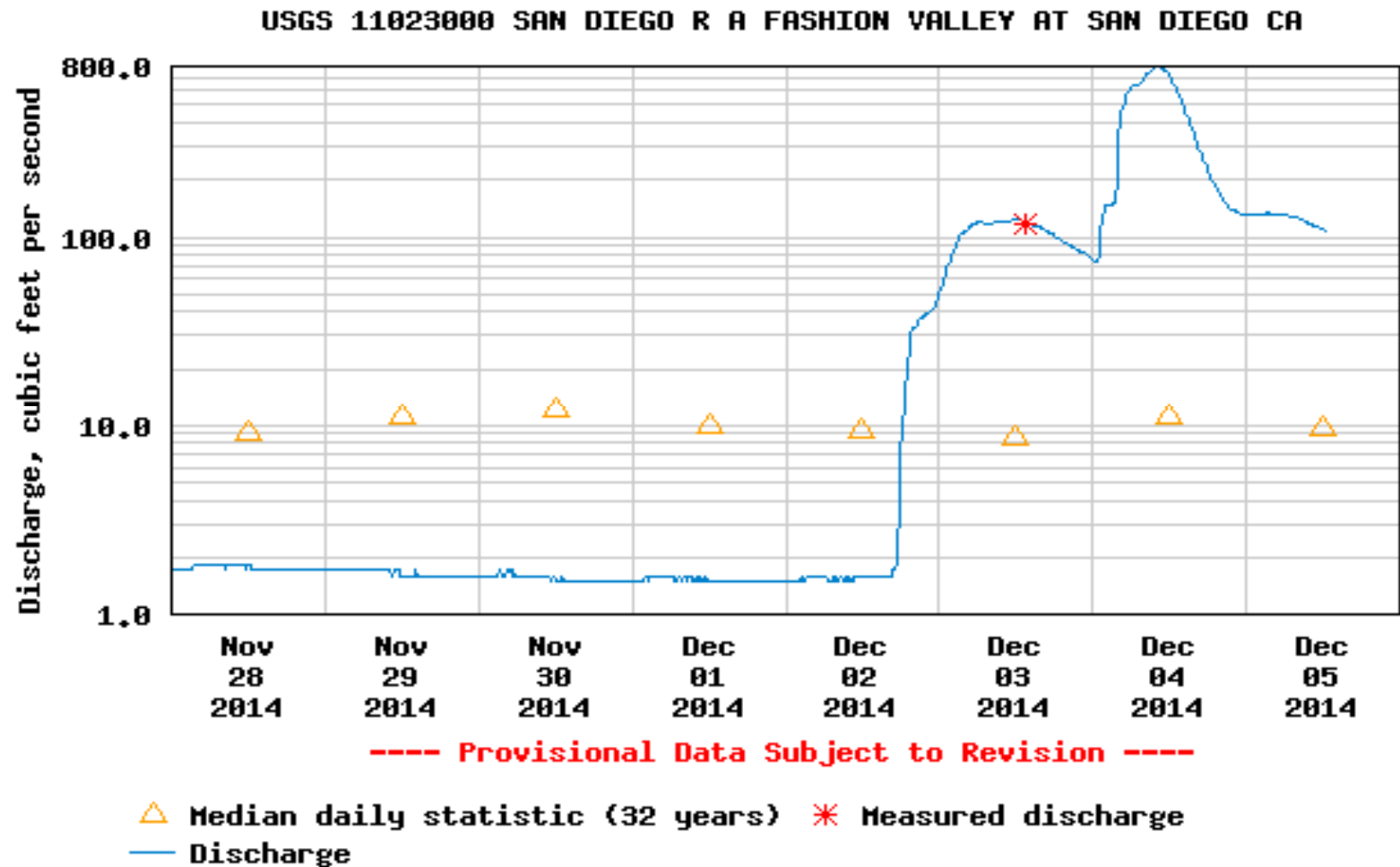


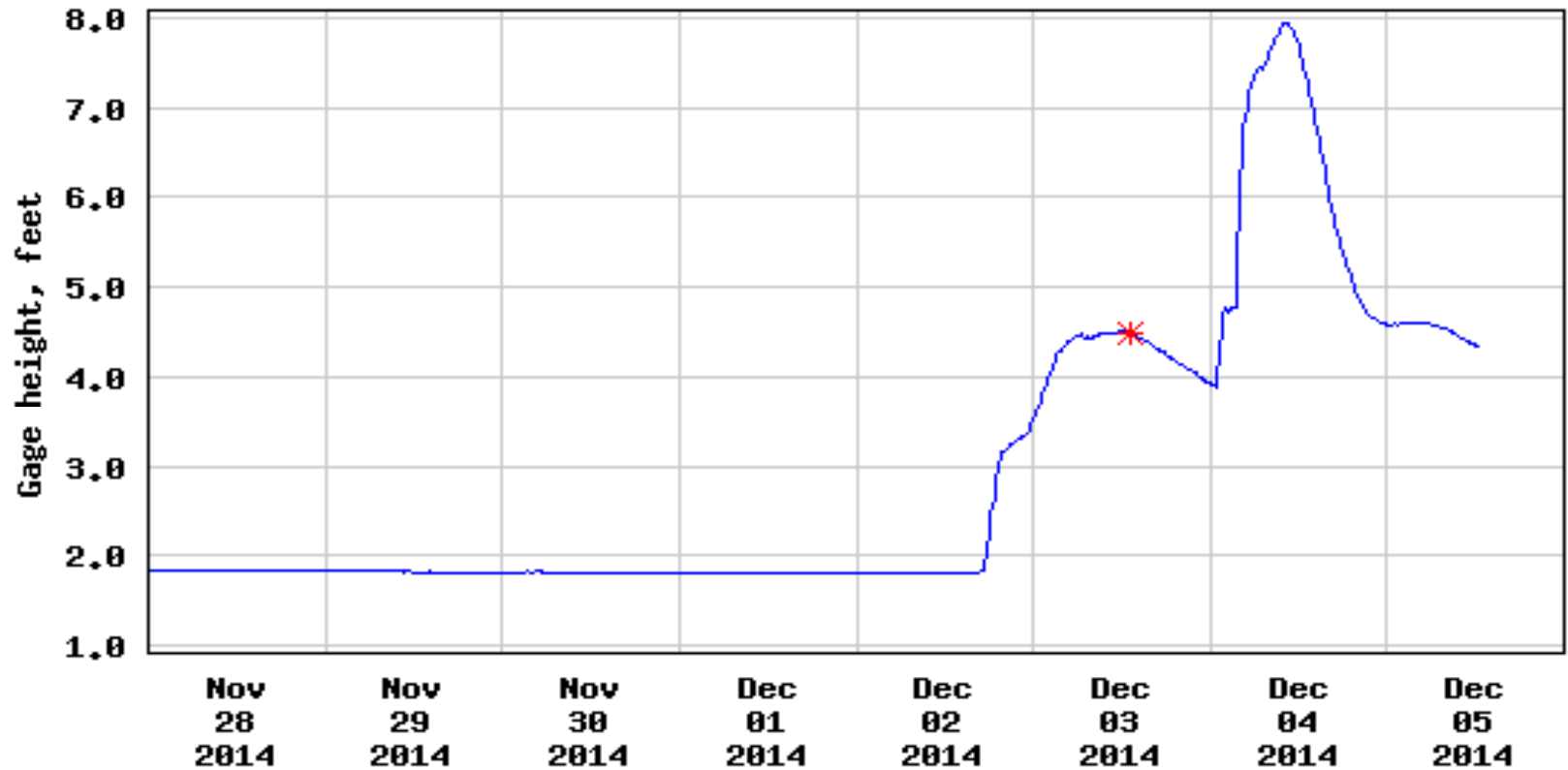
Figure 11.27

San Diego River - Discharge



San Diego River – Gauge Height

USGS 11023000 SAN DIEGO R A FASHION VALLEY AT SAN DIEGO CA



---- Provisional Data Subject to Revision ----

— Gage height

* Measured gage height

Urban Flooding

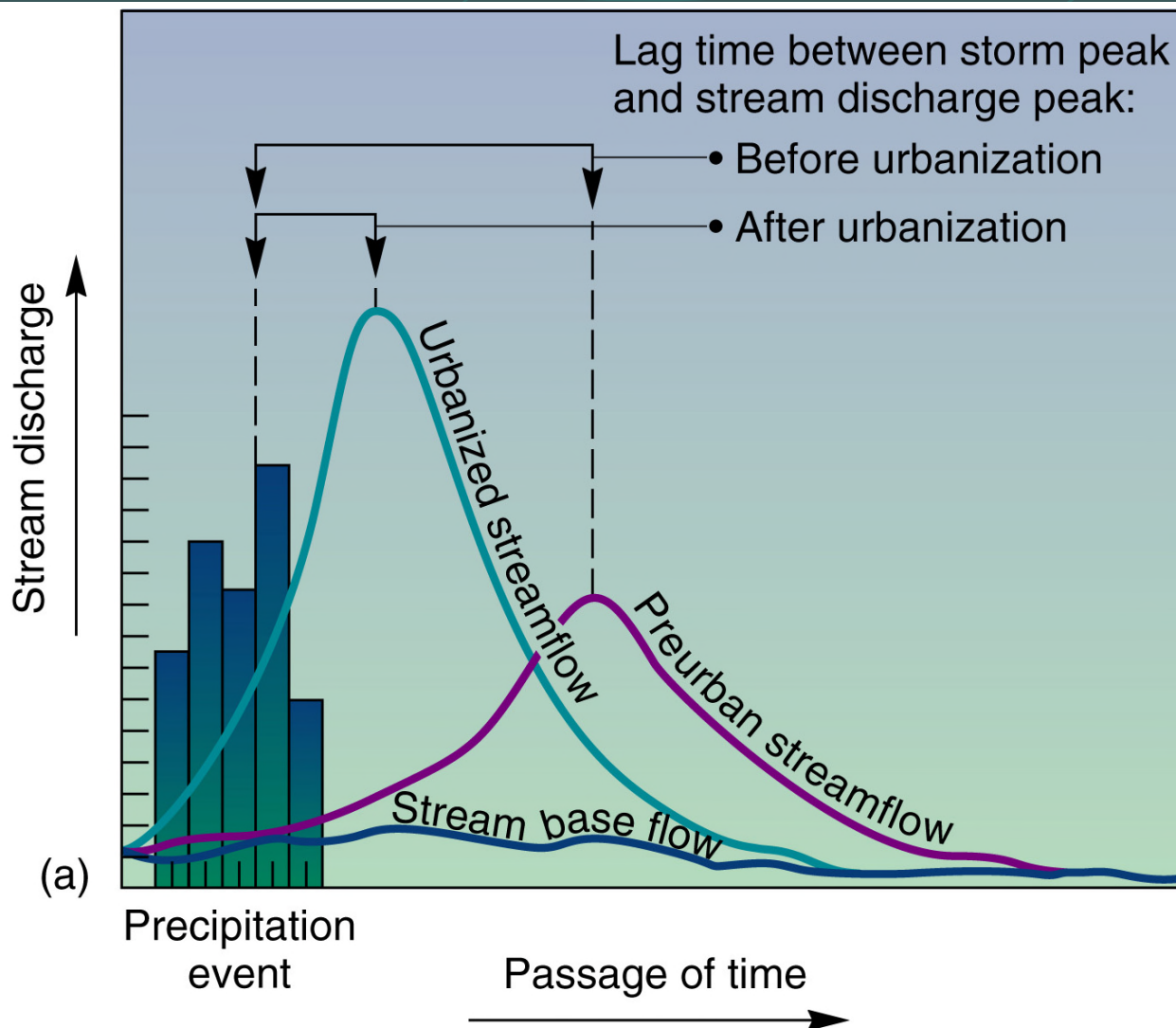


Figure 11.28

Stream Table Activity



Head's-Up for Next Week's Lab

Exam II

Preparation

- 1) Online Study Guide on Prof's website.
- 2) Study lab worksheets
- 3) Study materials reserved in library