Deposition

SLOWING OF VELOCITY

- Decrease in gradient
- Decrease in discharge
- Loss of channelization
  - Flood stage
  - Body of water
Deposition

- Flows into a body of water
- Creates delta
Delta Formation

- Deposition decreases gradient
- Flood stage—gets out of its deposit
Delta Formation

- Flood stage--gets out of its deposit
- Forms set of ‘DISTRIBUTARIES’
Delta Formation

• Forms set of ‘DISTRIBUTARIES’
Deposition

SLOWING OF VELOCITY

• Loss of channelization
  – Body of water
  – Flood stage
Stream Processes and Floodplain Development

Natural Levee Formation
Stream Processes and Floodplain Development

Natural Levee Formation

Flooding and levee development

Sediment rich water
Natural Levee Creation

- Competence lost when stream leaves its channel
- Deposits largest particles first

http://www.ucpress.edu/books/pages/6664/6664.ch04.html
Natural Levees
Natural Levees

- Valley wall
- Floodplain
- Back swamp
- Yazoo tributary
- Coarse sediments
- Fine sediments
Yazoo River

Yazoo Backwater Area Project and Vicinity Map

Alluvial Fan

• Badwater Fan, Death Valley, California

http://www.windows.ucar.edu/earth/geology/images/alluvial_fan_lg.jpeg
Drainage Patterns

• Channel layout within a drainage basin
• Described by overall shape formed
  – Dentritic
  – Radial
  – Rectangular
  – Trellis
A. Dendritic
C. Rectangular
Ridges of resistant rock

Valleys cut in less-resistant rock

D. Trellis
Flash Flood vs. Slow Flood

- Dry stream with sudden rainfall upstream
- Impermeable surfaces prohibit infiltration

- Protracted rainfall
- Saturated soil
- Bankful discharge
Rio Salado most days

- [Image](http://www.fws.gov/bhg/images/dryrio.jpg)
Rio Salado after upstream thunderstorm

- http://www.fws.gov/bhg/images/Puebloriaprian.jpg
Willamette, 1996

- http://www.westernrivers.org/camp_or_willamette.html
Willamette, 1996

Mississippi, usually
Mississippi, summer 1993

July 13, 1993

Mississippi River

Missouri River
Levee break in 1993

Ancient Lake Missoula

Flood area of Lake Missoula

Actual photograph of Missoula Flood

http://www.bpa.gov/Power/pl/columbia/4-geology.htm
Portland today

Portland then

the water level of a temporary lake formed by the Missoula Floods.

Dry Falls of Missoula Flood

• http://pbisotopes.ess.sunysb.edu/classes/oldclasses/geo320-520/student-webs/regulinski/
Channeled Scablands of Missoula Flood

Drainage Basins

- Area that drains into a stream
- Separated by drainage divides
Drainage Divide

- http://earth.geol.ksu.edu/sgao/g100tu/plots/1107_03_model_drainage.jpg
Drainage Basin

- http://www.mhhe.com/earthsci/geology/mcconnell/streams/drainage.htm
Colorado Drainage Basin

- [Link to image](http://earth.geol.ksu.edu/sgao/g100tu/plots/107_04_drainage_basin_co_river.jpg)
Calif. Drainage Basin
Sacramento and San Joaquin Rivers

http://www.delta.ca.gov/econrpt.html
Sub-basin of Mississippi

- http://www.mhhe.com/earthsci/geology/mcconnell/streams/drainage.htm
Sub-basin of drainage basin

- Can be delineated along divides as visible on topographic maps

- http://www.physicalgeography.net/fundamentals/10aa.html