

# SIO15 TOPIC 13: THE PRINCIPLES OF FLOODS

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Leftovers from Lecture 12

## Miscellaneous

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## The Causes of Floods

### 2011 Thailand Flood - Global Reach



### U.S. Disasters

The 1900 Galveston , TX Hurricane and Flood



The 1889 Johnstown, PA Flood



### The Longitudinal Profile - Stream Profile

The Gradient

Flow Speeds along the profile

Base Level

Energy, Erosion, Sedimentation

### The Mississippi River

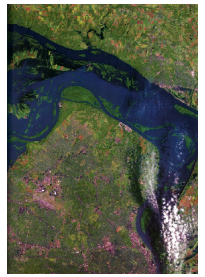
**watch short videos 9a,b**

Discharge

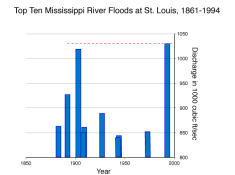
Flow Speeds in cross section

Floodplain

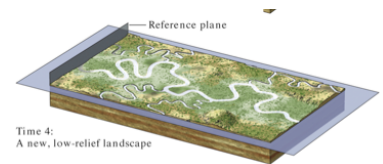
## The 1993 Mississippi Flood



## The 10 worst Mississippi Floods



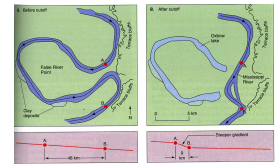
## Drainage Basin



## Meanders

watch short video 9c

inner and outer bank of a meander; oxbow lakes



## Changing the Mississippi discharge

## The Epic 1927 Flood

## Hurricane Katrina

