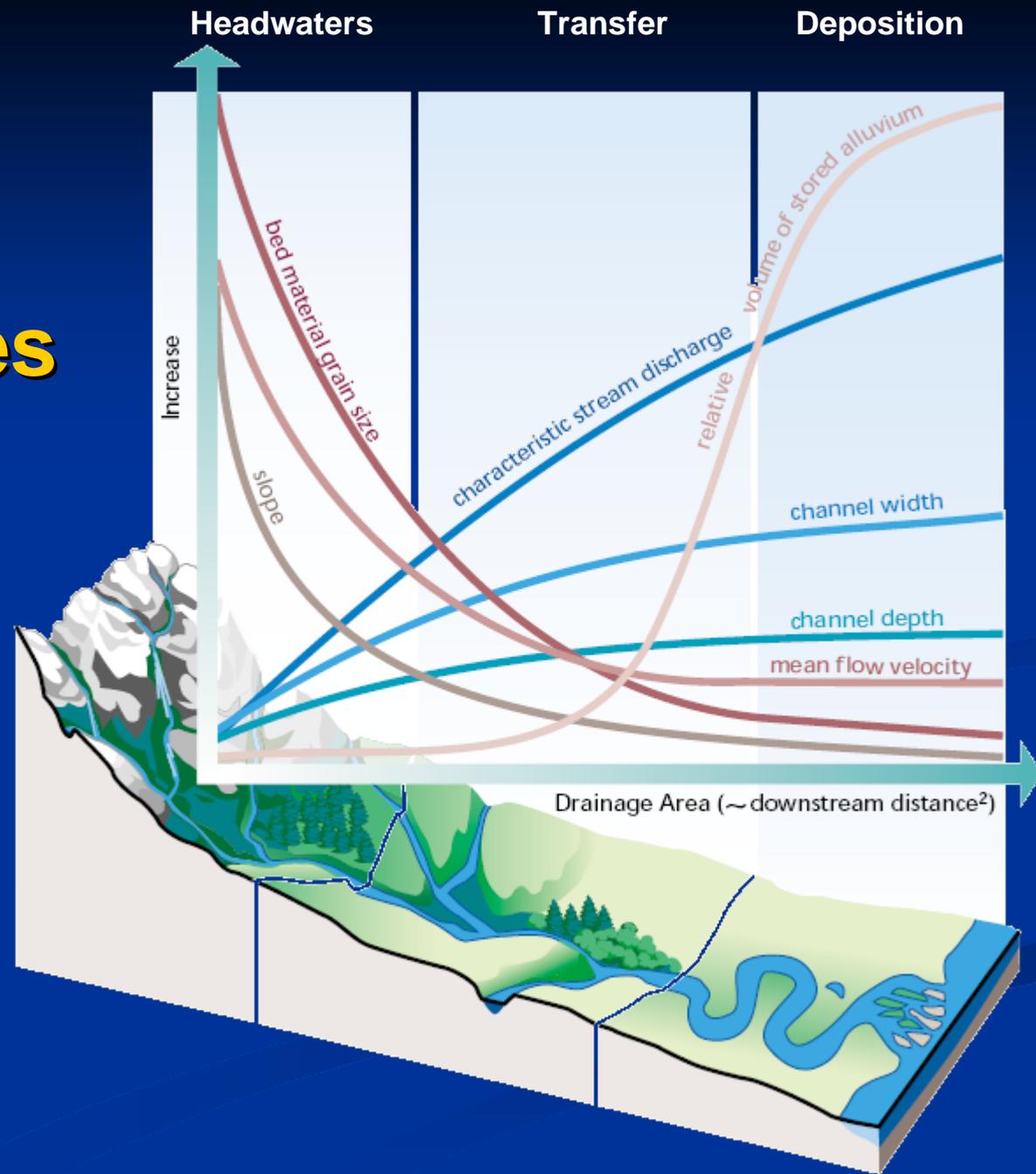
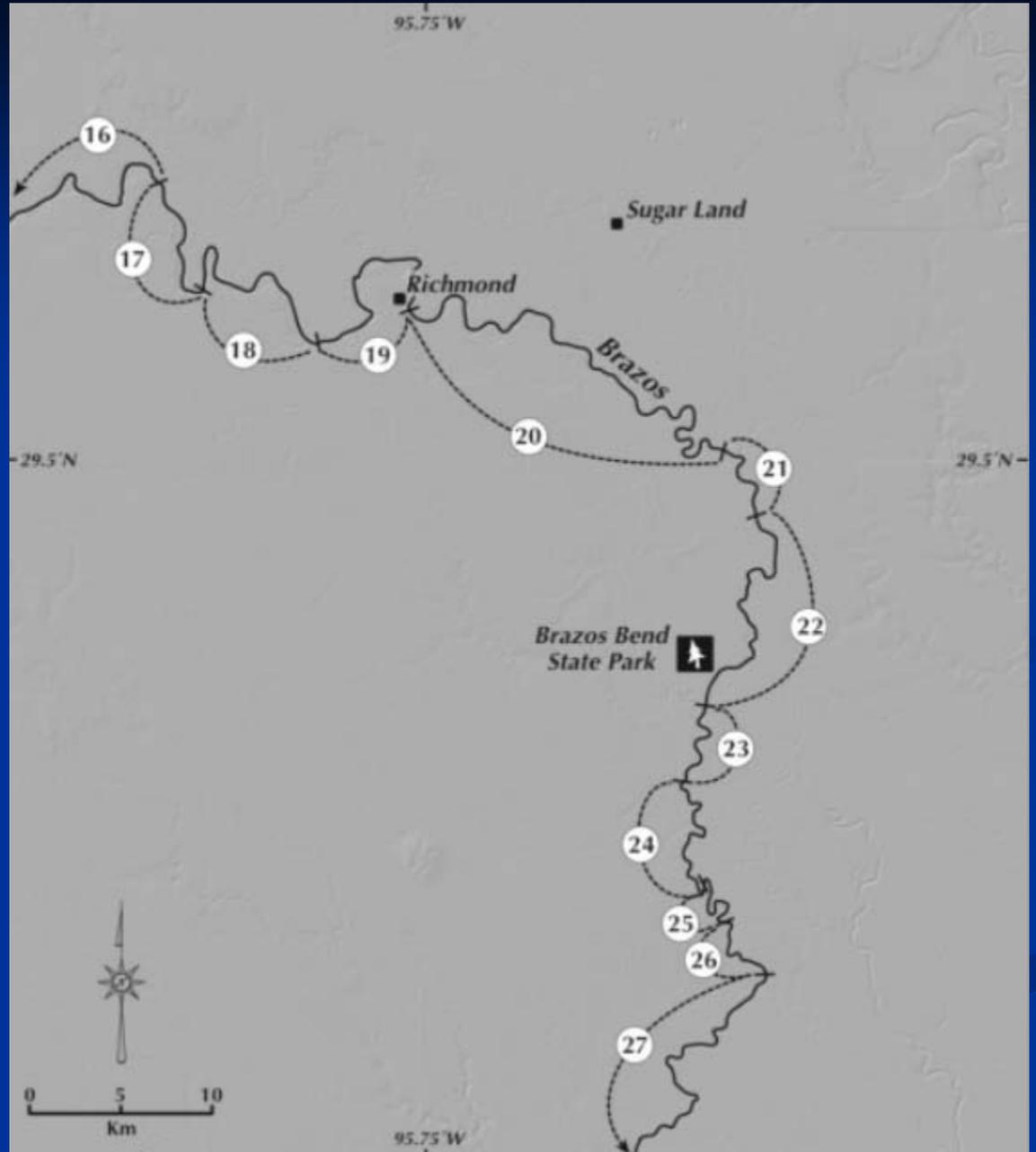


General Zones of a River



Geomorphic Classification

Phillips, 2007



Negative Impact of Overbank Flows



National Weather Service

Advanced Hydrologic Prediction Service

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Brazos River AT Richmond

Universal Time (UTC)



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Negative Impact of Overbank Flows

Flood Categories (in feet)

Major Flood Stage:	50
Moderate Flood Stage:	49
Flood Stage:	48
Action Stage:	20

Historical Crests

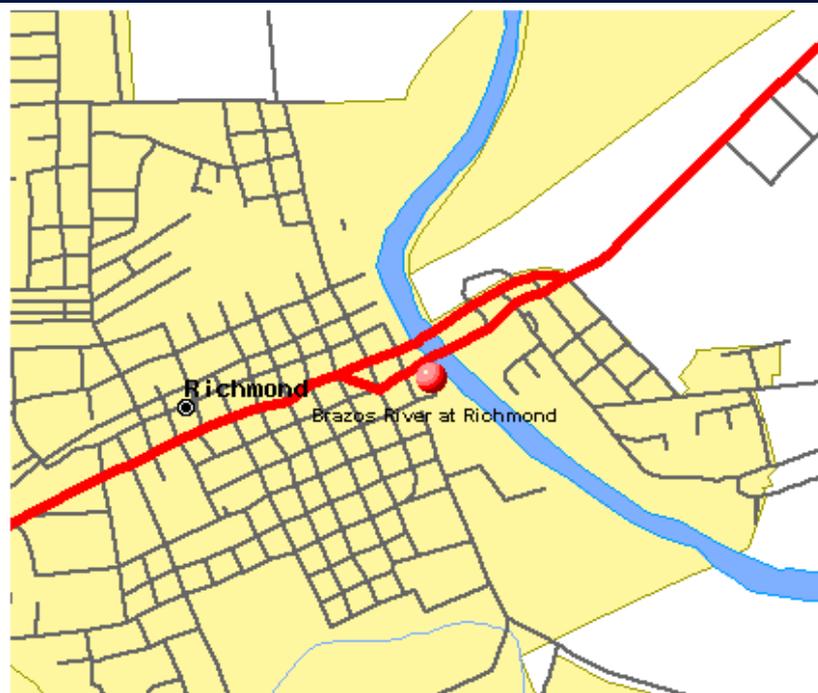
- (1) 50.30 ft on 10/21/1994
- (2) 49.80 ft on 01/01/1992
- (3) 48.93 ft on 10/23/1998
- (4) 47.38 ft on 03/01/1992
- (5) 47.15 ft on 01/31/1992

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Low Water Records

- (1) 11.5 ft on 11/10/1988
- (2) 11.9 ft on 10/16/1983
- (2) 11.9 ft on 10/04/1984

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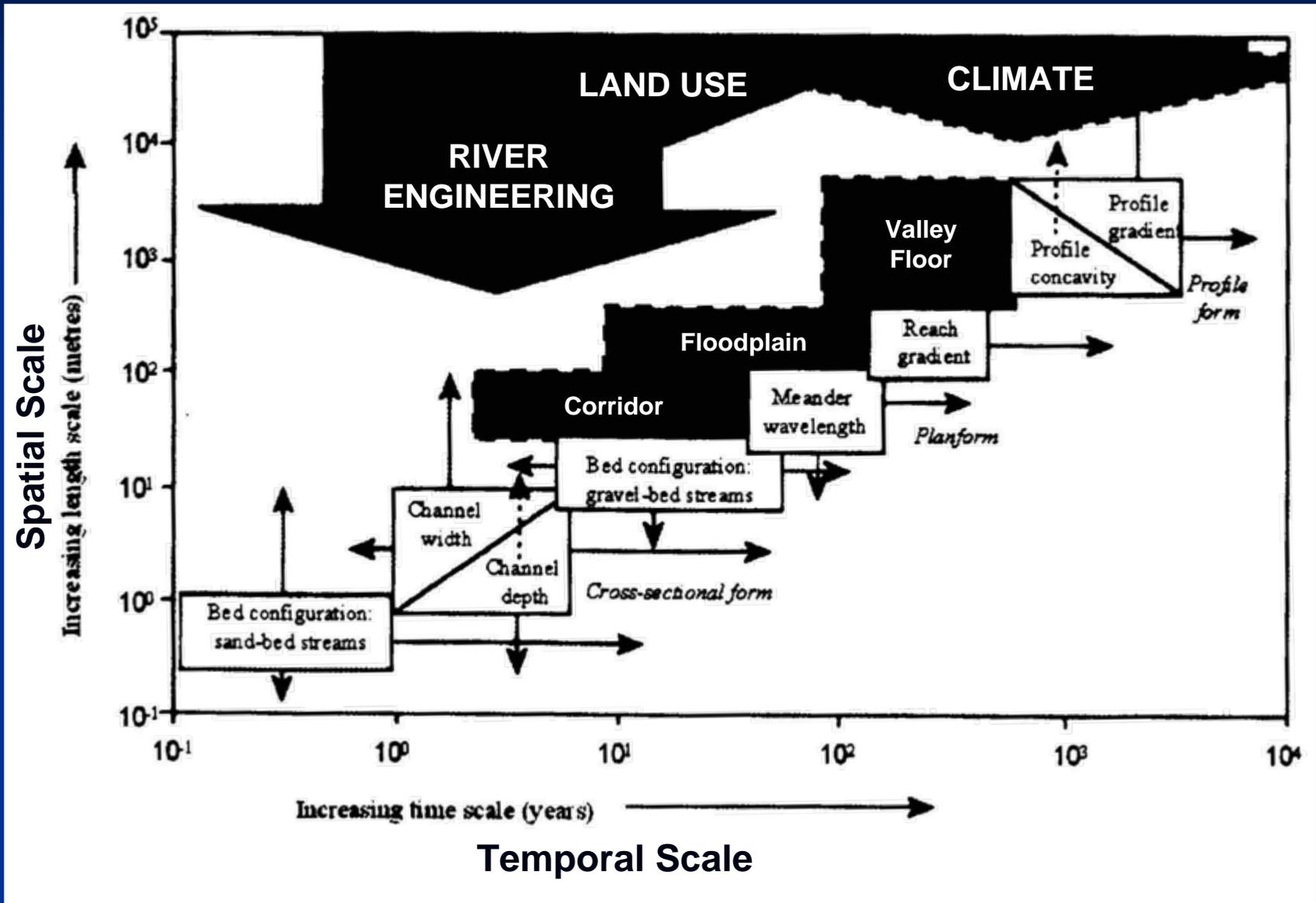


Flood Impacts

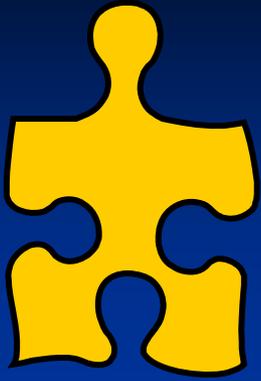


- 50.7 Major lowland flooding begins as homes in Richmond begin to flood and many homes in Simonton and Thompsons have water in them. Many homes in the Oyster Creek Farms subdivision have water in them due to significant flooding up Flat Bank Creek and there is major flow across the flood plain into Oyster Creek near Harris Reservoir and the Ramsey Unit Prison Farm.
- 49.8 Massive lowland flooding occurs with many homes in Simonton and Thompsons flooded. There is major flow across the flood plain into Oyster Creek near Harris Reservoir and the Ramsey Unit Prison Farm.
- 48.0 Flooding begins in vicinity of gage with homes threatened upstream in Simonton and downstream in Thompsons. Backwater flooding up Flat Bank Creek puts water in homes in Missouri City and water passes through the flood plain and enters Oyster Creek north of Harris Reservoir.
- 47.6 Water is in the Simonton area upstream from the gage. Significant backwater flooding up Flat Bank Creek threatens homes in Missouri City. Water enter Oyster Creek through culverts and through the flood plain north of Harris Reservoir.

The Importance of Scale



Statewide Objectives



Geomorphology

- Examine status of geomorphic processes within the system



Middle and Lower Brazos River Geomorphology Objectives

- Identify interrelationships among
 - flows
 - bank stability
 - channel maintenance, and
 - alluvial and associated aquifers



Middle and Lower Brazos River Geomorphology Indicators

- **Bank stability**
 - Rate of channel migration
 - Rate of channel avulsion
 - Rate of bank erosion
- **Channel maintenance**
 - In-channel bars
 - Meander pools
- **Aquifers:** Flow gain/loss
- **Flood Impacts:** Stage