

Riverbank Stabilization Criteria and Examples

Pierre Y. Julien

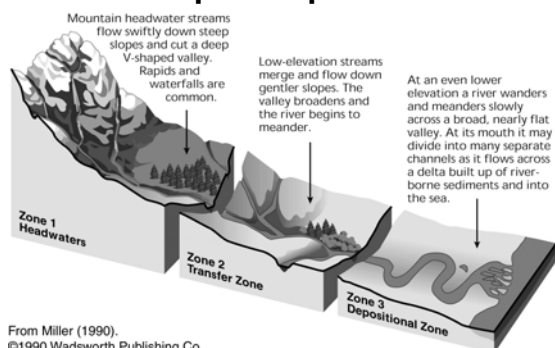
Wuhan 2005

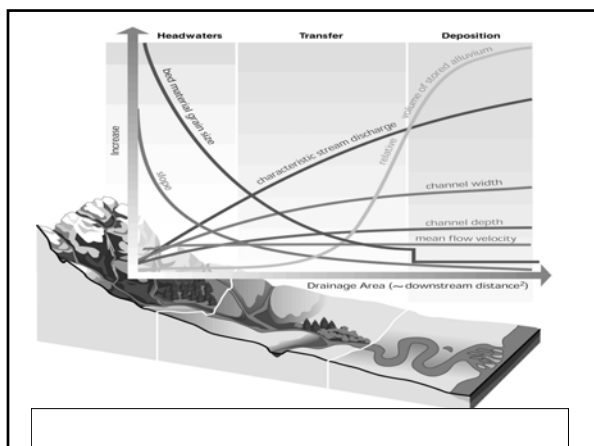
Objectives

Part III – Stream Stabilization

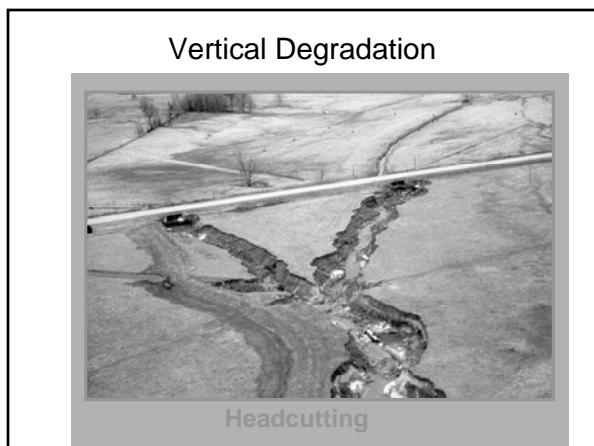
1. Present and discuss important concepts, criteria and guidelines for small rivers
2. Present examples of stream stabilization

Concept of Equilibrium











Bank Caving



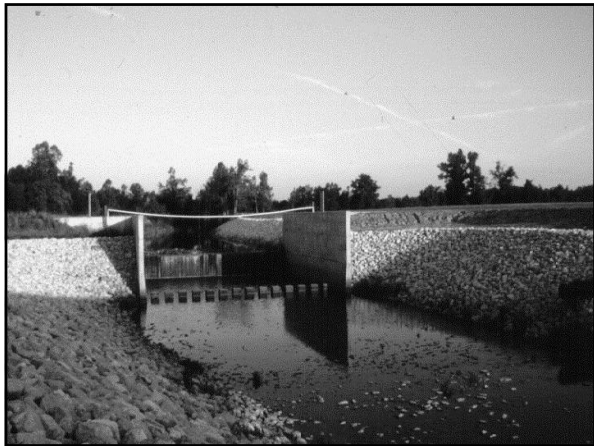
Headcutting











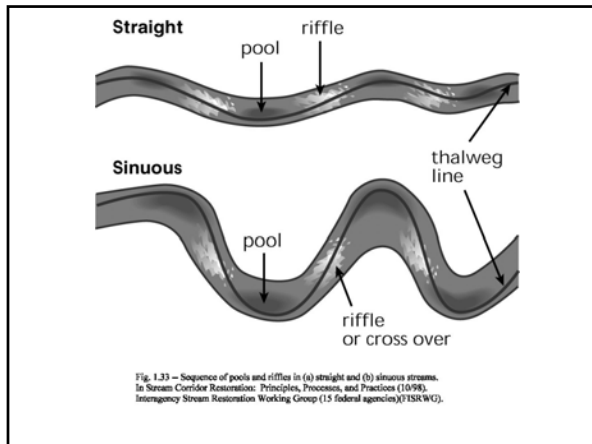


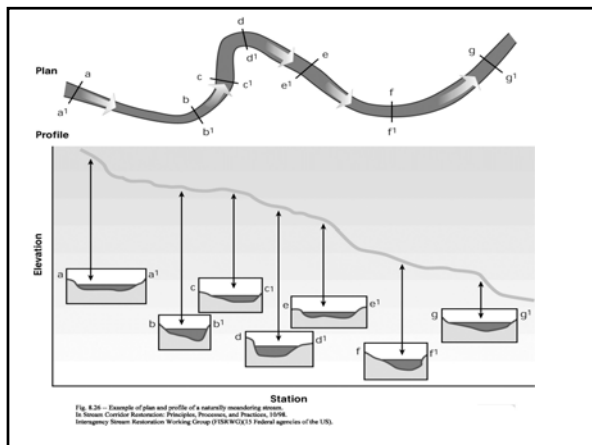


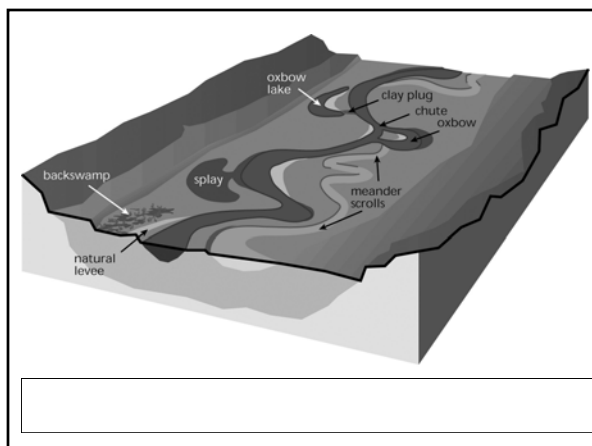




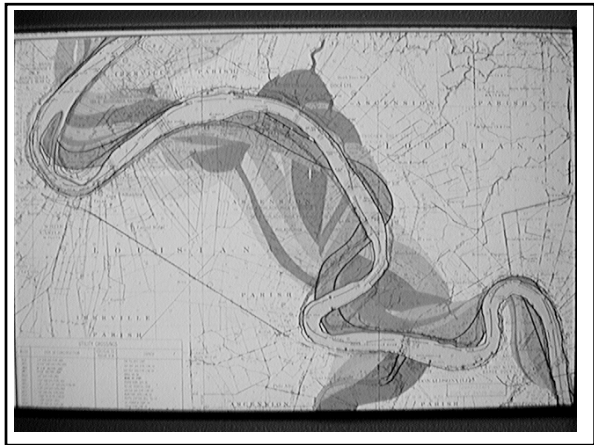














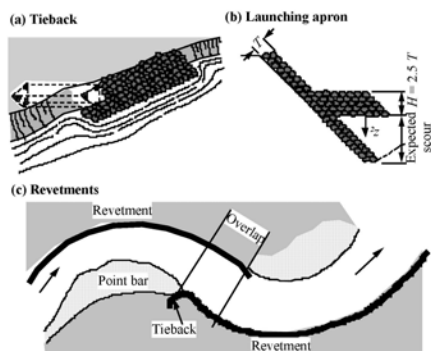
Bank Protection

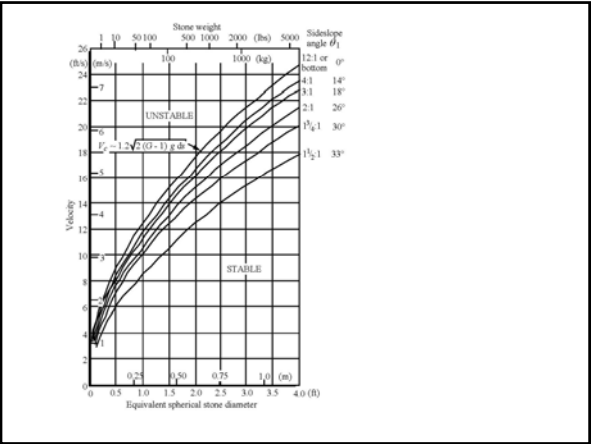


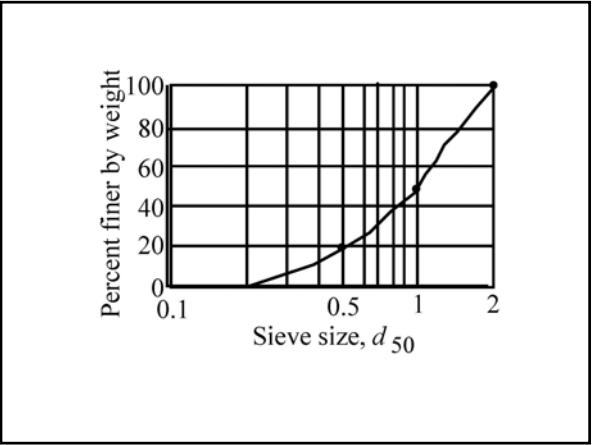
REQUIREMENTS OF BANK STABILIZATION

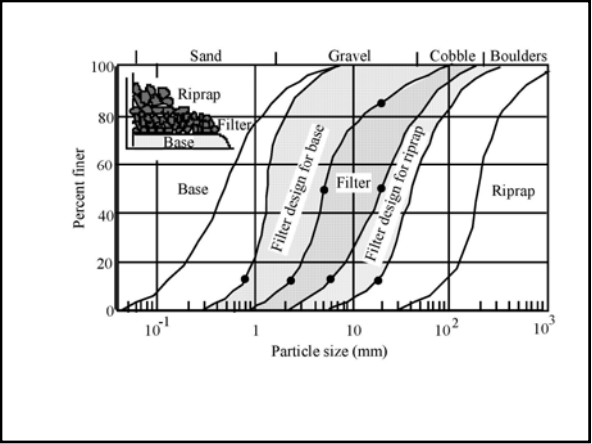
- Effective
- Environmentally Sound
- Economical

(Listed in order of necessity)

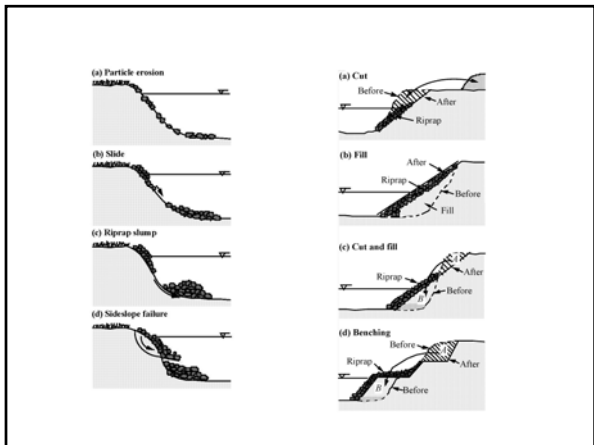
















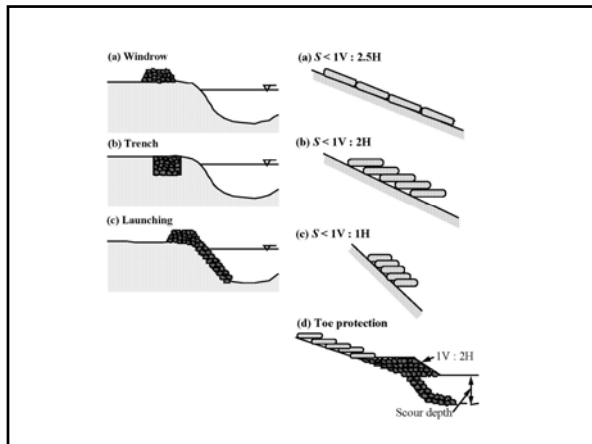


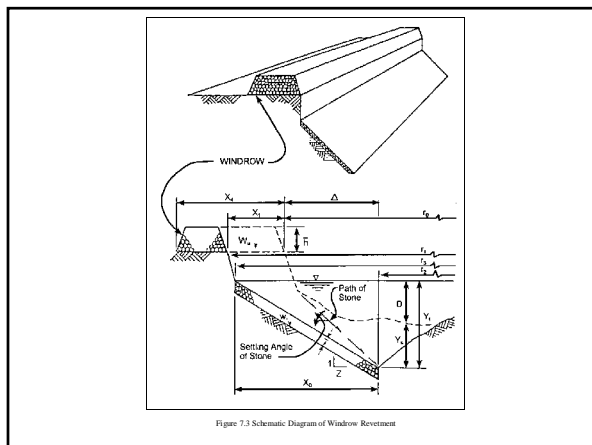








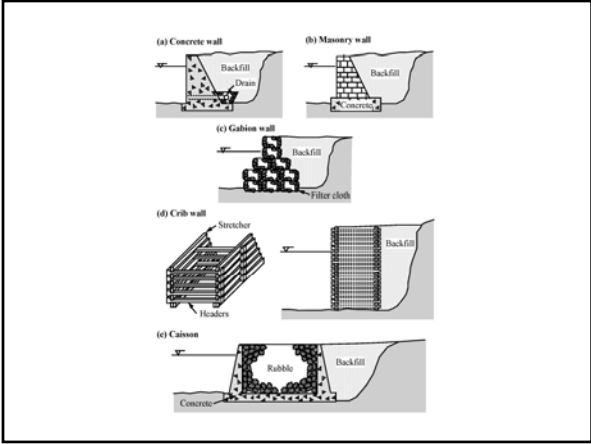




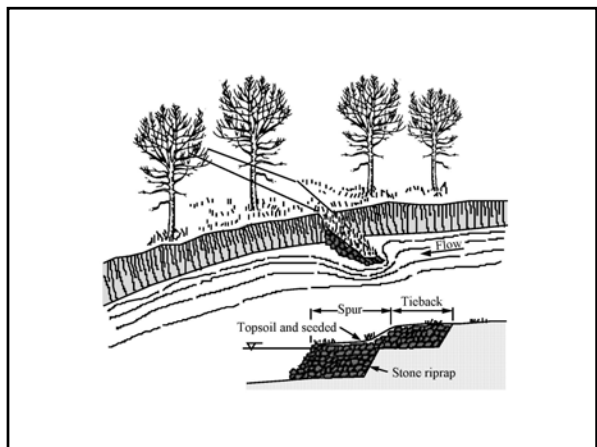


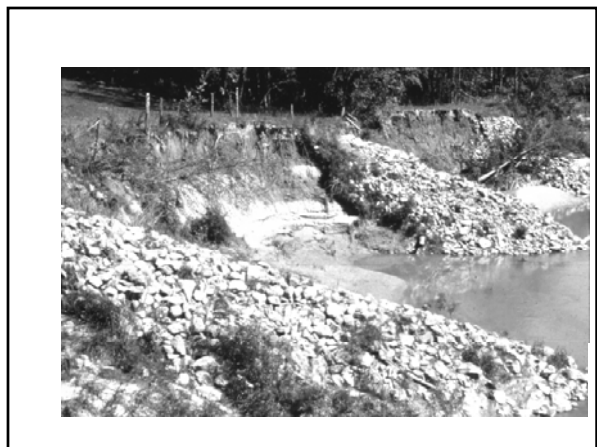














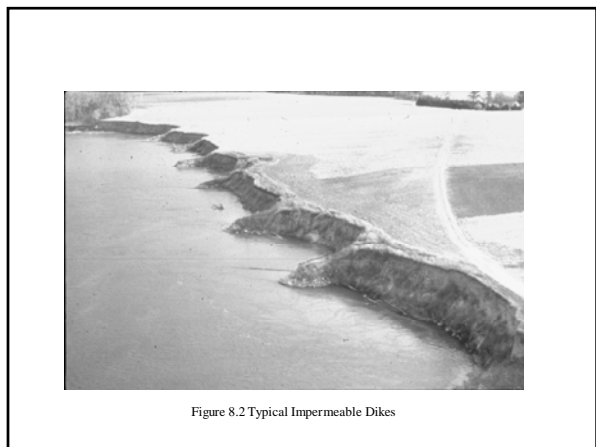
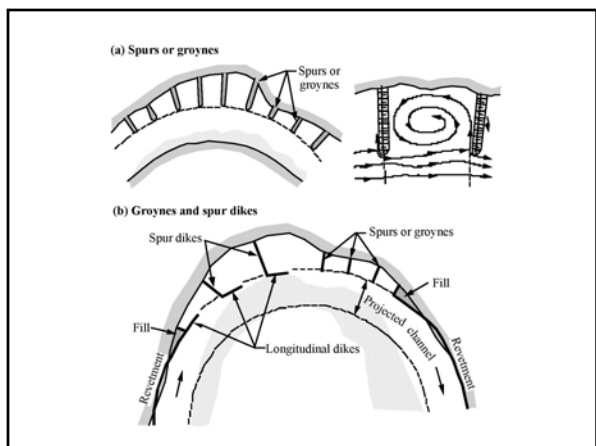
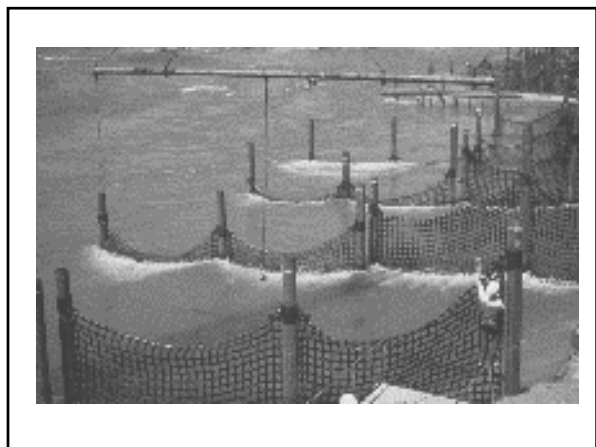


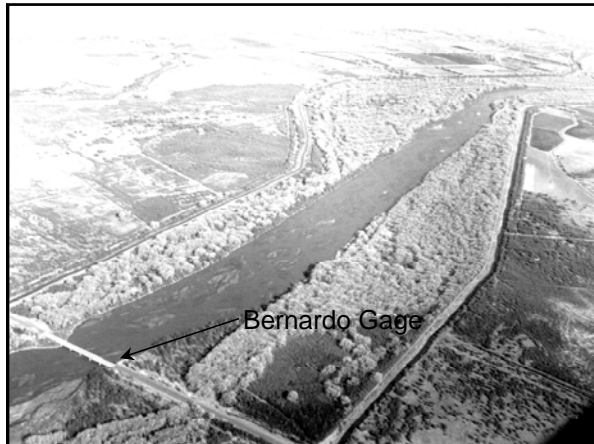
Figure 8.2 Typical Impermeable Dikes











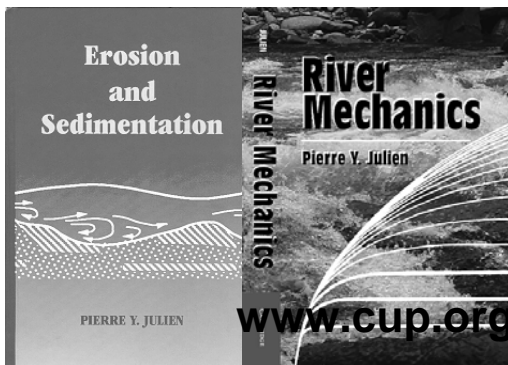
Timber Pile Revetment



Revetment Capout



Erosion and River Mechanics Textbooks

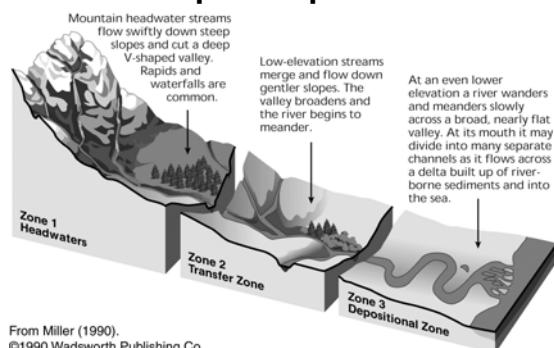


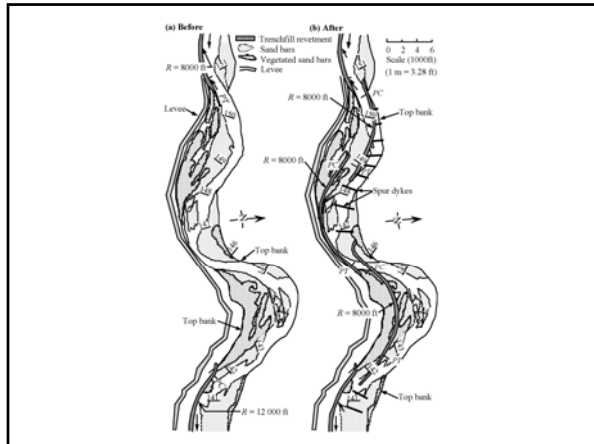
Objectives

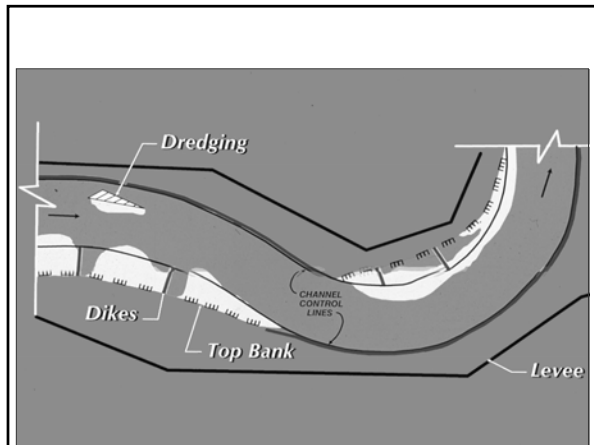
Part IV – Riverbank Stabilization

1. Present and discuss important concepts, criteria and guidelines for large rivers
2. Present examples of riverbank stabilization

Concept of Equilibrium









Channel Contraction



Channel Control Dikes

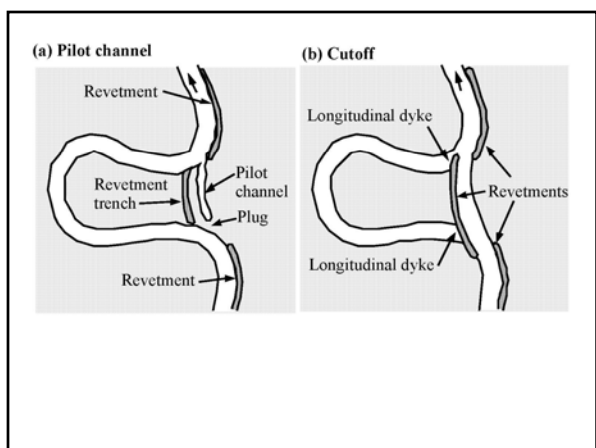


Navigation









Channel Realignment



Construction Dredging



Oxbow Preservation



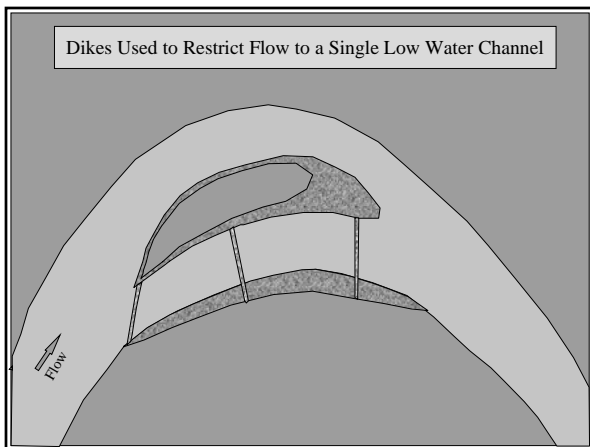
Access to Oxbows



Trenchfill Revetment



Dikes Used to Restrict Flow to a Single Low Water Channel



Additional Contraction Structures



Dykes



Environmental Considerations



Typical Stone Dyke



Rough Concrete Surface



Vented Dykes



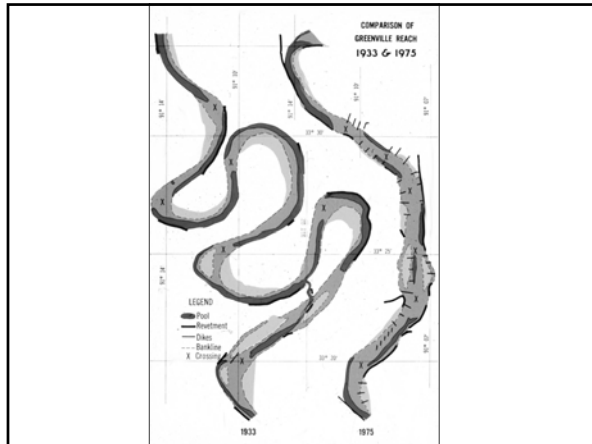


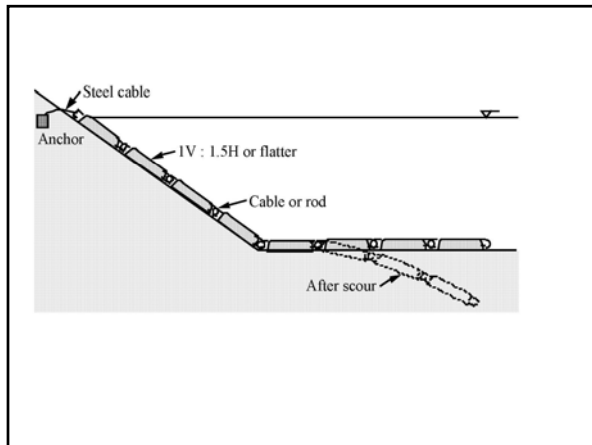
Geobags

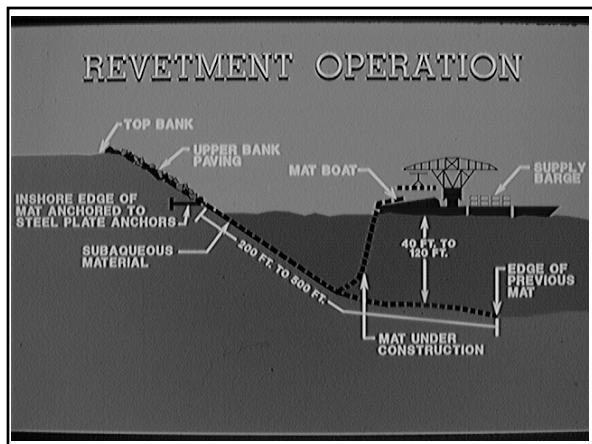


Geo Containers

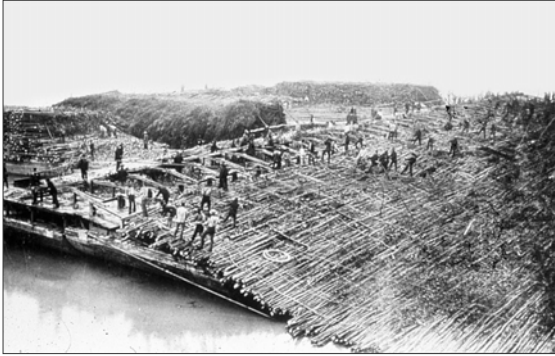






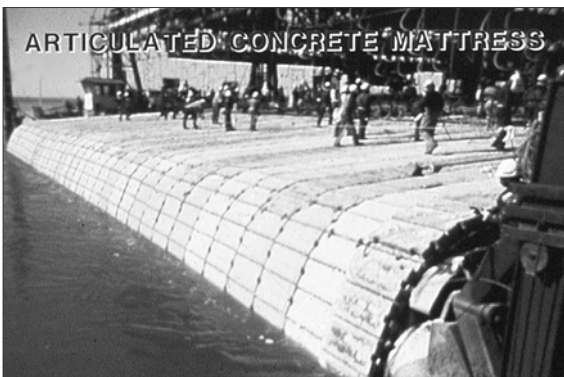


Willow Mats



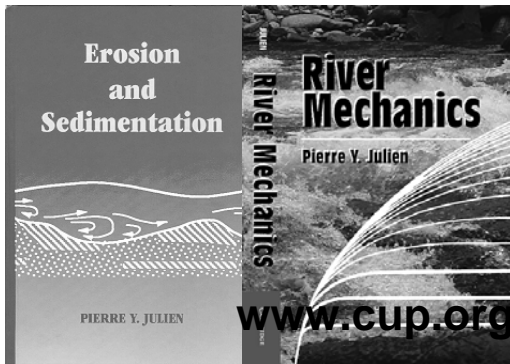


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**THANK YOU
for your
Attention!**
