

# **VETIVER SYSTEM FOR RIVER AND CANAL BANK STABILISATION**

**Paul Truong**

***TVNI Technical Director, Brisbane, Australia***

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# Principles of the Vetiver System for River Bank Stabilisation

***In flood erosion control and riverbank stabilisation the VS uses the deep and high tensile root system to reinforce the bank slopes and its dense and stiff stems to spread and reduce flow velocity .***

- To stabilise the bank steep gradients, horizontal rows planted on approximate contour lines
- To reduce flow velocity of the strong current therefore preventing scouring from the strong flow, planting of cross rows is needed.
- For maximum effect, the cross rows are orientated at right angle to the flow direction.
- *The spacing of both horizontal and cross rows varies with slope gradient and length, soil type, flow velocity and depth .*

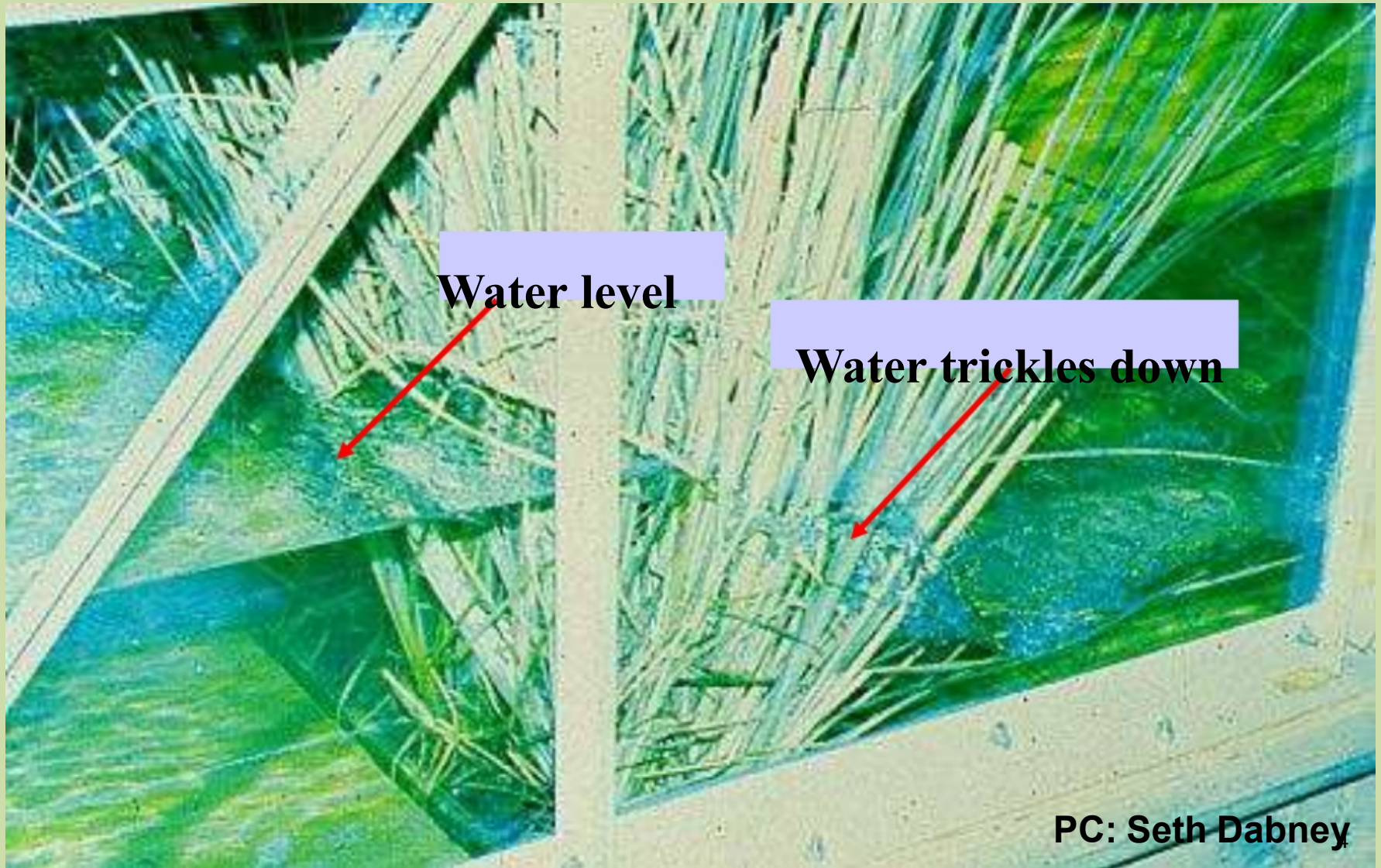


# **Strong current flattened the native grass but not vetiver on this waterway**





# Indoor flume test



PC: Seth Dabney





# In flume test a mature hedge can bank up water to 600 mm depth





# STREAMBANK STABILISATION IN AUSTRALIA





# Severe erosion on the abutment of the Coolumboola Creek bridge near Miles





# Vetiver planting following repair of bank.





# Cross rows are most effective when planted right angle to flow direction





# One month after planting





# Six month after planting





**There were several big flows during the first summer and no damages were noted. This abutment is now well protected by these mature vetiver.**





# 18 months after planting





# Five years after planting

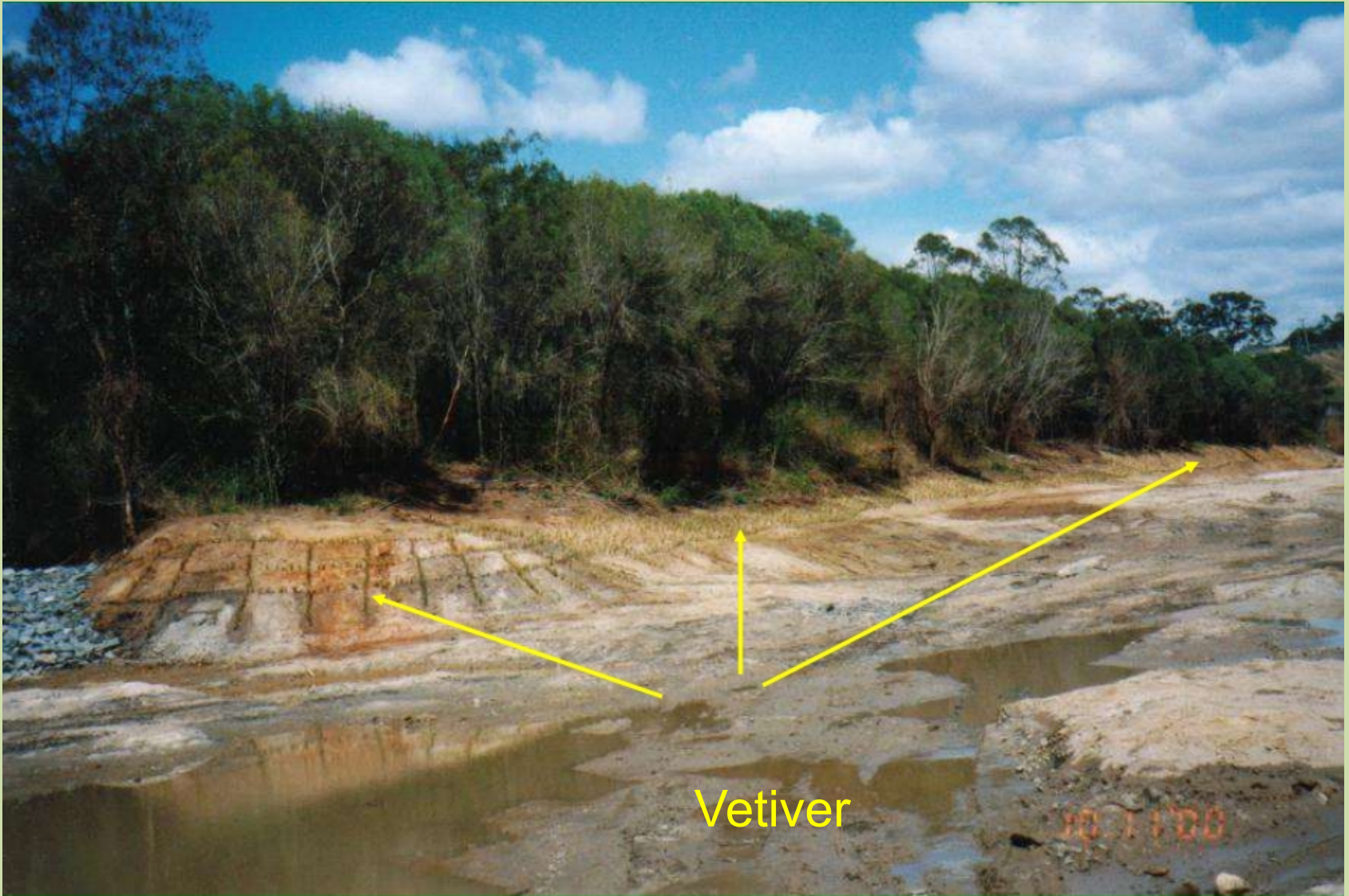








# Dam spillway protection





# Six months after planting

















# Eight months after planting





# Mekong Delta Vietnam: Protecting bank against wave erosion





# Six months after planting









# Assam, India : Doria Bridge approach, Note: grid pattern





# Two months after planting





## Two years after planting





# Australia - Badly eroded drainage channel on acidic sulfate



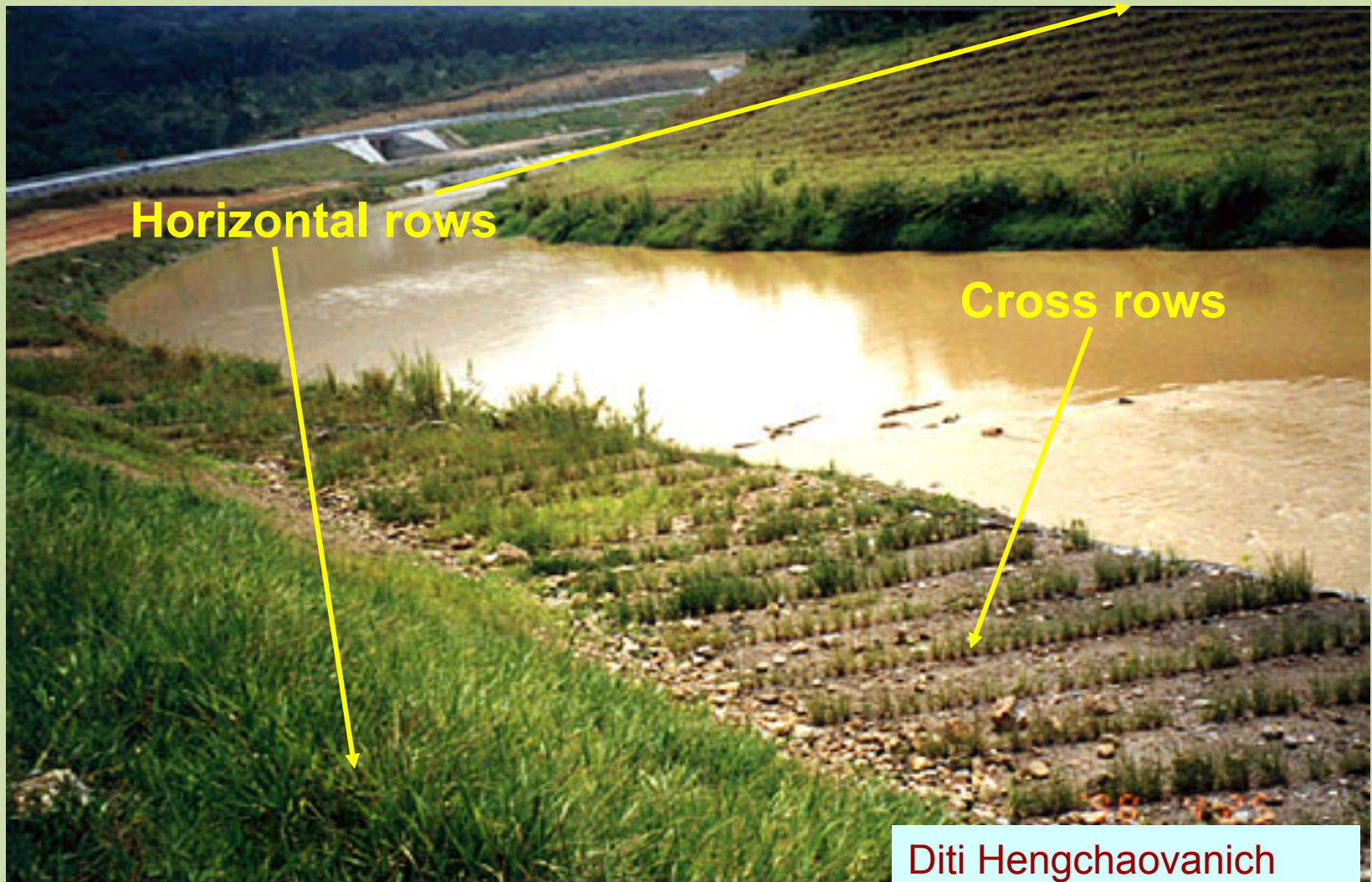


## Australia - Four months after planting





# Malaysia: An outstanding success, several floods did not damage this river



Diti Hengchaovanich





# South Africa: A very well layout provided complete protection against erosion

