



LARGE WOOD PRECISION PROTOTYPING AND 3D-HYDRAULIC MODELING APPLIED RESEARCH TO EVALUATE RIVER PROCESSES & ENHANCE ENGINEERING GUIDELINES

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USING LARGE WOOD FOR RESTORING RIVERINE PROCESSES BALANCING STABILITY AND RISK VS. ECOSYSTEM FUNCTION



PREDICTING HYDRAULIC/GEOMORPHIC RESPONSE FROM WOOD



RECLAMATION

Managing Water in the West

Technical Report No. SRH-2013-09

Coupled 2D Morpho-Dynamic and Bank Erosion Modeling at the Upper Junction City Channel Rehabilitation Project Site, Trinity River, CA



U.S. Department of the Interior
Bureau of Reclamation
Technical Service Center
Denver, Colorado

March 2013

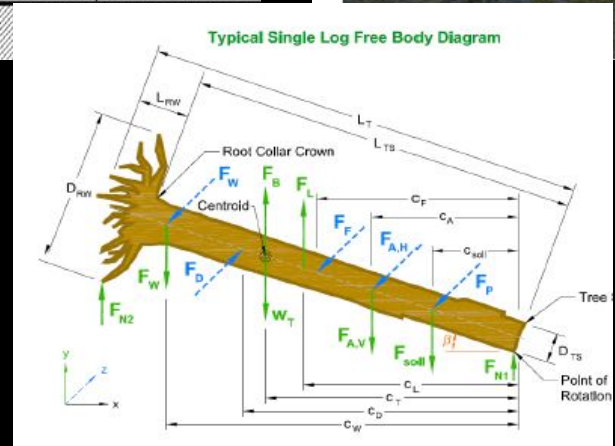
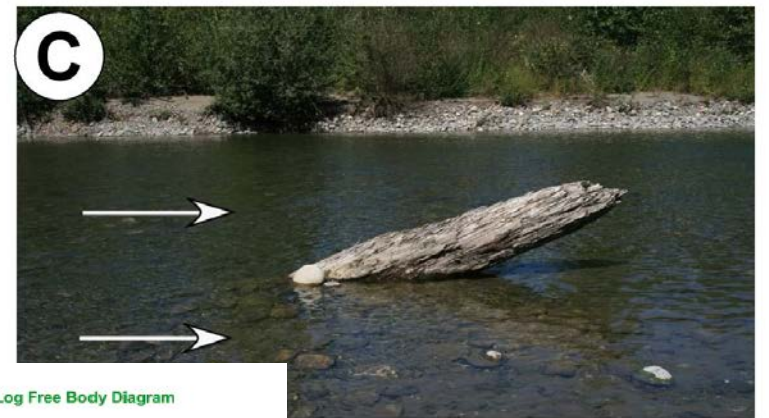
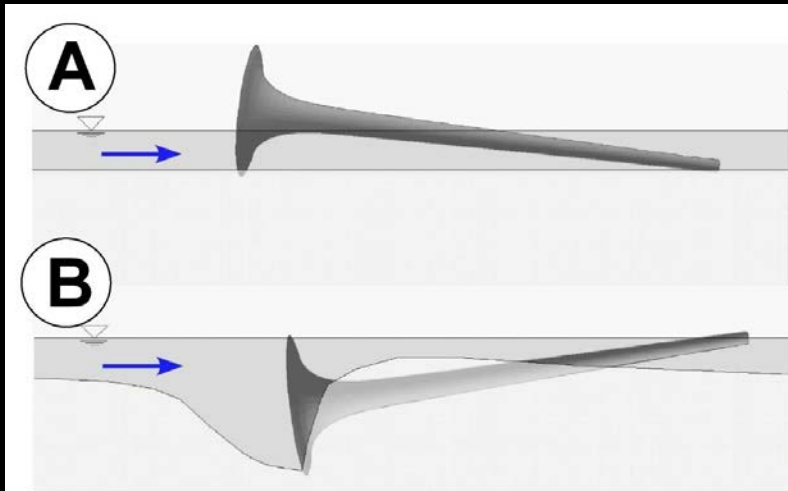
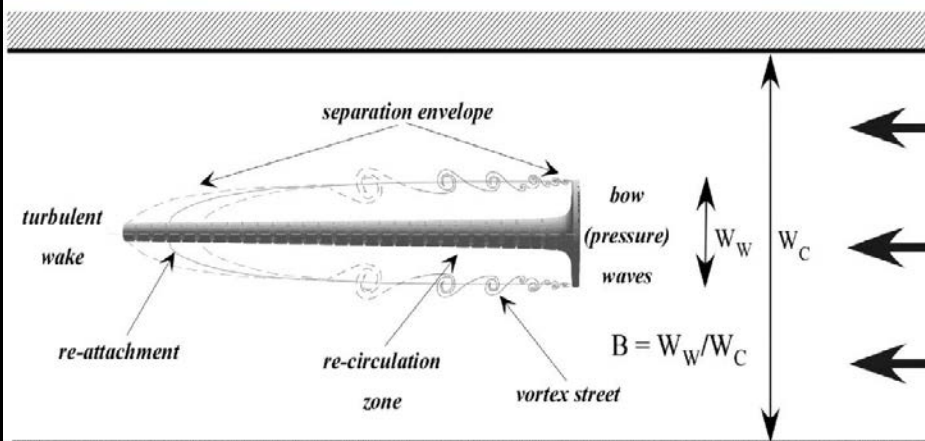
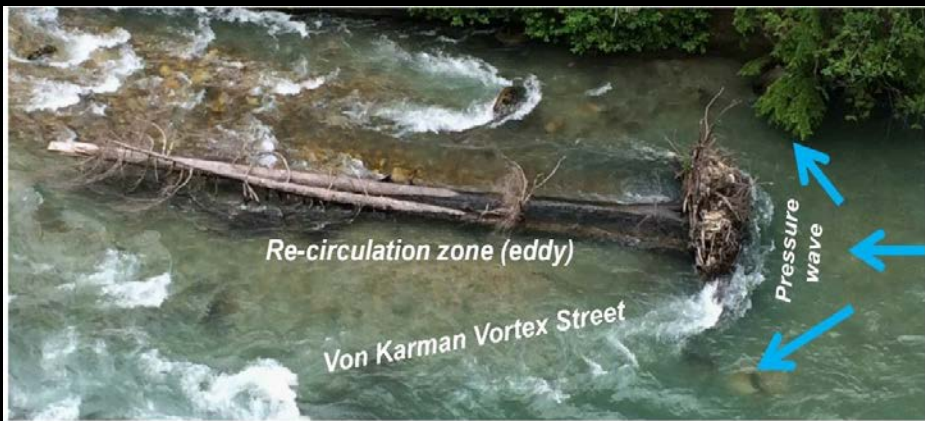
“COMPLEXITY IS COMPLEX! – EMBRACE UNCERTAINTY!”

**ENGINEERS’
WORST NIGHTMARE**

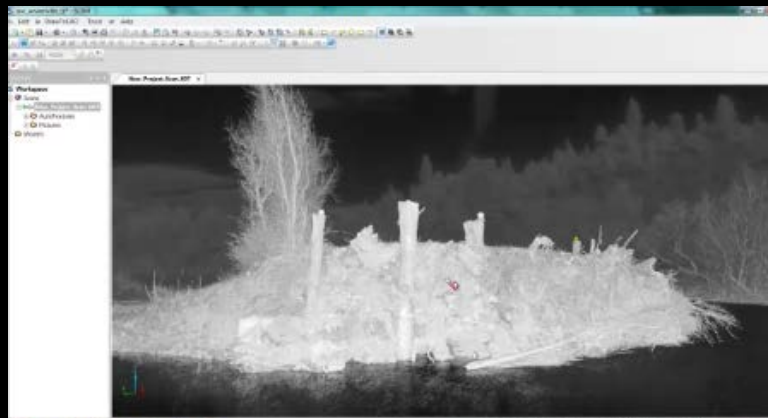
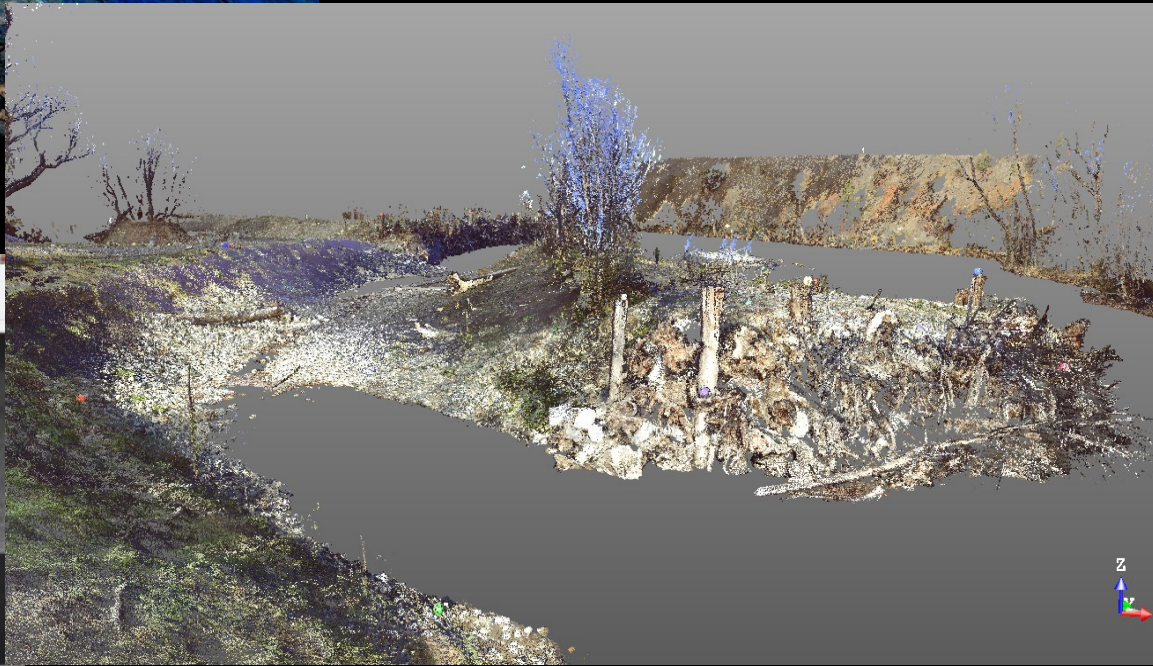
**ENGINEERS’
SWEET DREAM**



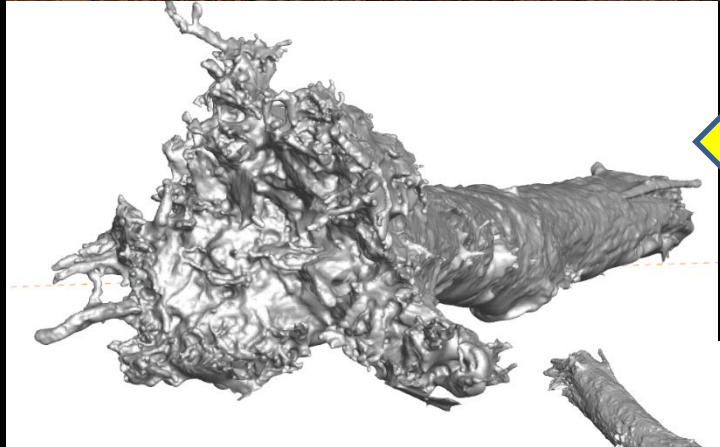
MODELING LARGE WOOD PHYSICS AND USING IT TO ENHANCE ENGINEERING



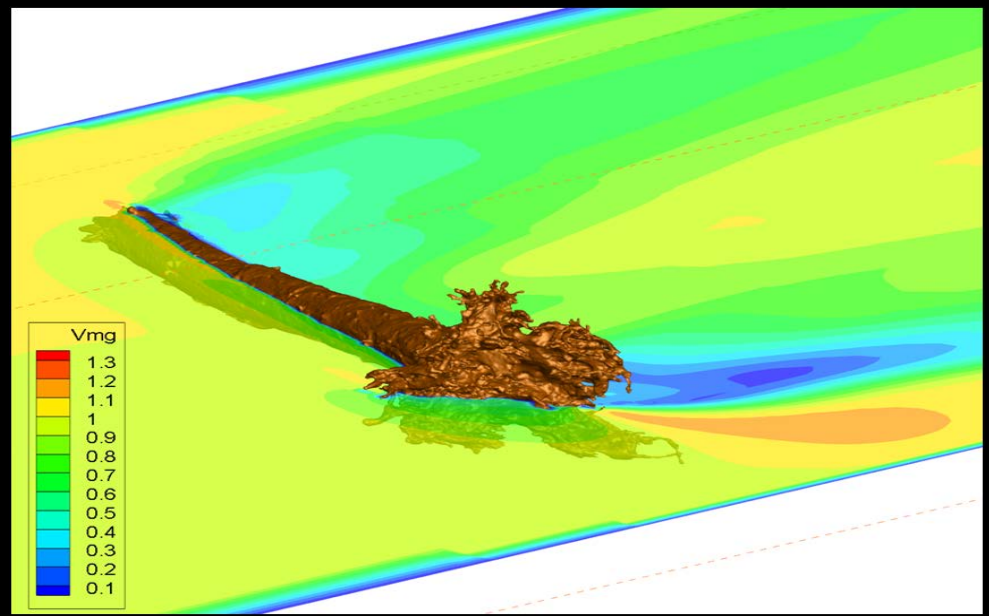
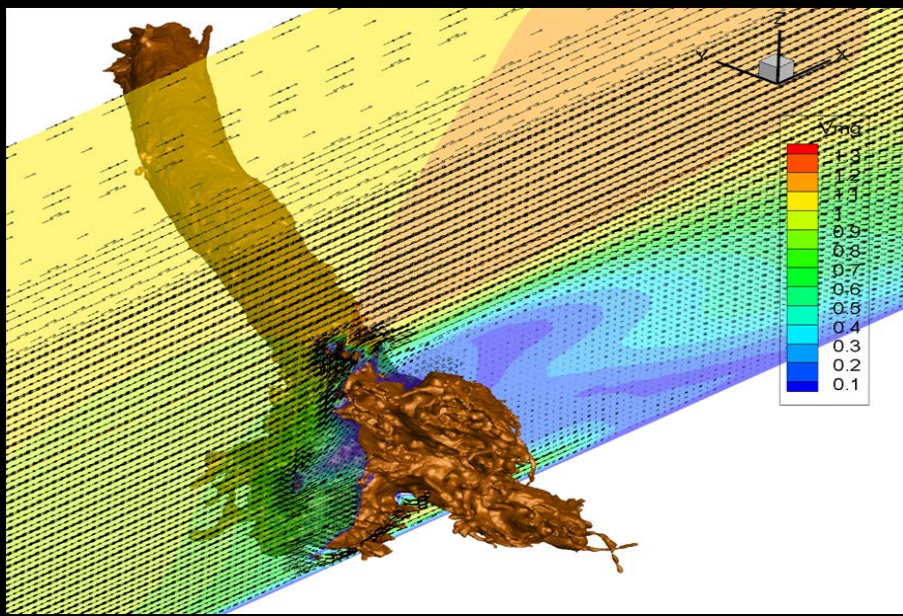
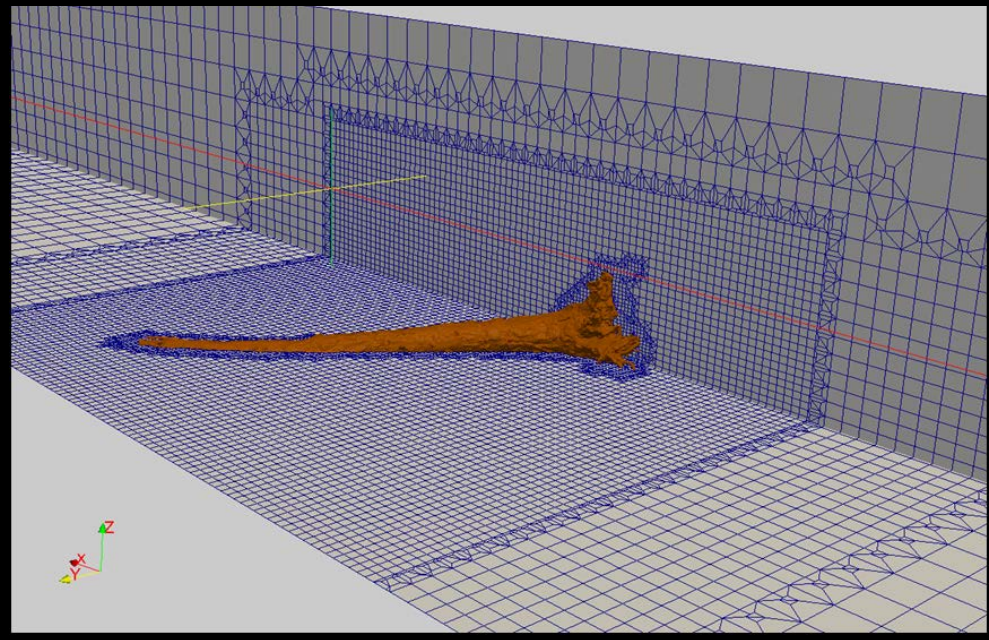
REPLICATING LARGE WOOD THROUGH REVERSE ENGINEERING USING SCANNERS AND STRUCTURE FOR MOTION (SfM)



DEVELOPMENT OF 3D POINT CLOUDS AND SOLID MODEL WORKFLOW



USING COMPUTER BASED - 3D HYDRAULIC CFD NUMERICAL MODELING TO EVALUATE LARGE WOOD



DEVELOPMENT OF 3D POINT CLOUDS AND SOLID MODEL WORKFLOW FLUME LABORATORY EVALUATION



APPLYING THE RESEARCH- AGGRESSIVE TECHNIQUES FOR WOOD LOADING

