ASCE Australia Section Master Class

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ASCE
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AUSTRALIA SECTION

Principles of Streambank Analysis and application of the Bank Stability and Toe-Erosion Model (BSTEM)

Presented by Dr Andrew Simon

Dr. Andrew Simon is a geomorphologist with 30 years of experience in mechanistic analysis of unstable-channel systems, streambank erosion, cohesive-sediment entrainment, the role of riparian vegetation, “reference” sediment-transport rates, and river restoration, working on projects throughout the United States and around the globe.

His interests are in quantifying the effects of imposed channel and landscape disturbances, and mitigation measures on channel response and sediment loads. He is an internationally recognized scientist and project manager, designing field, laboratory and numerical-modeling studies, leading and participating in field data collection, analyzing and synthesizing data, and preparing technical reports. He is the author of more than 100 technical publications and the editor of several books.

Dr. Simon has designed, conducted, and managed projects focusing on the adjustment and evolution of channel systems, development of a mechanistic bank-stability model for stream restoration, sources and magnitudes of sediment delivery, quantifying potential sediment-load reductions according to restoration strategy, and determining “background” rates of sediment transport for developing water-quality targets. He was the project chief and lead scientist on numerous projects that quantified historical/existing sediment-transport rates and channel erosion, and the effects of restoration strategies on reducing erosion and sediment-loads.

Dr. Simon is heavily engaged in geomorphic studies in NSW, Queensland and New Zealand focusing on several critical issues such as sediment delivery to receiving waters, flood recovery along rivers in the wake of floods, and cost-effective gully and bank-erosion control in catchments.

Date

Tuesday 5 August 2014

Location

Cardno Conference Room
Level 9, 203 Pacific Highway
St Leonards NSW 2065

Program

See over for the program

Cost

$275 per attendee (inclusive of GST)

Registration

Please complete, scan and email to:
karlene.finlayson@cardno.com.au
Telephone (02) 9496 7700

Title:.....

First Name:.....

Surname:.....

Organisation: .....

Address: .....

.....

State: ..... Postcode: .....

Telephone: .....

Email: .....

Names of additional attendees:

.....

.....

Payment Amount:.....

Payment Method: ☐ Mastercard ☐ Visa

Credit Card No. .....

Expiry Date (MM/YY). .....

Name on Card. .....

Signature. .....

http://www.asce.org/australia-section/

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Program

0815 - 0830 hrs	**Registration**
0830 - 0930 hrs	**Principles of Channel Adjustment** Conceptual framework: Force and resistance in fluvial and geotechnical processes, thresholds, types of equilibrium, time scales, roles of vertical and lateral changes, channel evolution
0930 - 1030 hrs	**Role of Streambank Erosion in Channel Adjustment and Sediment Yields** Sediment contributions from streambanks, widening in channel adjustment, effect of boundary resistance on adjustment
1030 – 1045 hrs	**Morning Tea**
1045 – 1130 hrs	**Mechanics of Streambank Erosion** Bank stability processes, forces affecting shear strength, pore-water pressure effects, hydraulic erosion processes.
1130 – 1230 hrs	**Integrating the Effects of Vegetation** Hydraulic versus geotechnical effects, root reinforcement, hydrologic effects
1230 – 1300 hrs	**Lunch**
1300 – 1400 hrs	**Introduction to the Bank-Stability & Toe-Erosion Model (BSTEM)** Model development, Model structure, Input requirements, Applications, and Appropriate interpretation of results
1400 – 1500 hrs	**Case Study Application: Approach to Stable Bank Design** Hydraulic issues, geotechnical issues, role of riparian vegetation
1500 – 1530 hrs	**Afternoon Tea**
1530 – 1630 hrs	**Case Study Application: Quantifying Erosion Reduction from Streambanks** Unit loading rates, extrapolation to longer reaches, comparison to mitigated conditions, importance of toe protection
1630 – 1645 hrs	**Concluding Remarks**