

Salt Marsh Geomorphology: Physical and Ecological Effects on Landform Scientific Program

Friday October 8

19:00-22:00 Icebreaker and early registration at the Lord Nelson Hotel

Saturday October 9

08:50-9:10 Welcome by R. Torres, discussion of meeting organization by D. van Proosdij

Session 1: Intertidal zone biogeomorphology, I

Session Chair: Charles Hopkinson

09:10-9:40 **INVITED Interactions Between the Hydrodynamics, Ecology and Morphology of Saltmarshes: A Case Study from Dengie, UK:** I Moller

09:40-10:00 **Assessment of the potential consequences of large-scale eradication of *Spartina anglica* from the Tamar Estuary, Tasmania:** M S Sheehan

10:00-10:20 **Sedimentary Dynamic and Bacterial Mineralization Processes in an Urbanised Coastal Saltmarsh (Pointe-au Père, Rimouski, Québec):** P Poulin

10:20-10:40 **Break**

10:40-11:10 **INVITED Scale-up of Sediment Biogeochemistry to the Ecosystem Level in a Georgia Saltmarsh:** J E Kostka

11:10-11:30 **Classification and Origin of Tidal Streams in Coastal Wetlands:** G M. E. Perillo

11:30-11:50 **Geomorphometric indicators of tidal marsh condition:** V. Valentine. and C.S. Hopkinson

11:50-12:10 **Marsh Vertical Accretion via Vegetative Growth:** J A Nyman, R J Walters, R D DeLaune, W.H. Patrick, Jr.

12:10-13:10 Lunch

13:10-13:40 **INVITED** Effects of Changes in Sea Level on the Equilibrium Elevation and Productivity of Salt Marshes: J T Morris

13:40-14:00 Sedimentation and the Evolution of Fresh Tidal and Salt Marshes in the Chesapeake Estuary: G. S. Brush

14:00-14:20 Processes of Geomorphic Evolution in a Northern San Francisco Bay Restored Tidal Marsh: S. W. Siegel

14:20-14:40 Flow Characteristics of Adjacent Tidal Creek Networks: R Styles, R. Torres

14:40-15:40 Panel Discussion

15:40-18:00 **Break** and Poster Session 1

Poster Session 1

Erosional Properties of the Petitcodiac River Sediments: A Rodriguez, K Haralampides

Intertidal Sediment Transport and Morphological Response in San Francisco Bay using Modified Princeton Ocean Model: Y Uchiyama

Suspended Sediment Dynamics and Sediment Transport on a Micro-tidal Salt Marsh During Flooding: O A Mikkelsen T J Andersen M Pejrup

Cycles of Saltmarsh Extension and Contraction, Cumberland Basin, Bay of Fundy: J Ollerhead, R G D Davidson-Arnott, A D Scott

Vegetation Change in San Francisco Estuary Tidal Marshes: E B Watson, A R Byrne

Sediment Sources for Local Tidal Marshes in the San Francisco Estuary: F. Malamud-Roam, B L Ingram J Collins

Reconstructing Long-Term Dynamics of Tidal Marsh Ponds in Coastal North Carolina Using Historical Aerial Photographs: B Poulter

Low Stress Consolidation Behaviour of Intertidal Sediments: M J Brain, A J Long, B P Horton, D N Petley, R J Allison

Constructing High-Resolution Records of Relative Sea-Level Change from Salt Marsh Foraminifera: An Example From Connecticut, USA: R.J. Edwards, O van de Plassche

Factors Influencing Historical Change in Salt Marsh Habitat in Cobequid Bay, Bay of Fundy: G Baker, D van Proosdij, S Robinson

Sunday October 10

Session 2: Field trip to the Bay of Fundy shoreline

Session Chair: Graham Daborn and Carl Amos

08:00-16:00 Field Trip to study sites in the New Minas Basin, and view the Fundy coast, box lunch provided. This will be a full day field trip to allow participants to observe a unique macrotidal environment and to promote cross disciplinary discussion in an informal setting.

16:00-18:00 Reception and tour, Acadia University

18:00-18:40 Presentation by Graham Daborn, Acadia University

19:00-21:00 Dinner at Acadia University.

21:00 Return to Halifax

Monday October 11

Session 3: Intertidal zone sedimentary and biosedimentary processes

Session chair: Ray Torres

08:50-10:00 **Panel Discussion (summarize previous days discussion, today's goals)**

10:00-10:20 **Mean Velocity Profiles of Tidal Flow in a Saltmarsh Canopy: a Laboratory Flume Study:** Z. Shi

10:20-10:40 **Particle Filtration in Permeable Intertidal Sediments:** M Huettel

10:40-11:00 Break

11:00-11:30 **INVITED Hydrodynamics and Particulate Transport in Vegetated Marsh Canopies:** L A Leonard

11:30-11:50 **Controls on marsh surface elevation change: the relative roles of sediments and plants:** D Reed

11:50-12:10 **Controls on Sedimentation in Tidal Salt Marshes Along the Rowley River, Plum Island Sound MA:** L E LeMay, C T Friedrichs, W M Lee, C S Hopkinson, Jr.

12:10-13:10 **Lunch**

13:10-13:40 **INVITED Temporal variability in the critical erosion threshold of salt marsh and upper intertidal sediments:** K S Black, D M Paterson

13:40-14:00 **Controls on Salt Marsh Accretion and Subsidence:** R E Turner

14:00-14:20 **Controls on the Biosedimentological Zones on the Fraser River Delta:** A L Shaw

14:20-16:00 **Break** and **Breakout Sessions (small group, cross disciplinary discussion)**

16:00-18:00 **Poster Session 2**

Poster Session 2

Intertidal Foraminifera Distribution and Zonation in Mangroves of North East Australia: Implications for Sea Level Reconstructions: S A Woodroffe, B P Horton, I Shennan

Utilisation of Anthropogenic Radionuclides in the Reconstruction of Sedimentary Processes and Saltmarsh Topography: M M Harvey, J D Hansom, A B MacKenzie

Modeling Tides in the Estuaries and Intertidal Regions of North Carolina: K W Hess, E A Spargo

Cross Sectional Evolution of Tidal Channels: Andrea D'Alpaos, S Fagherazzi, S Lanzoni, M Marani and A Rinaldo

Sediment Transport on an Intertidal Mudflat: Presence and Importance of Multiple Frequencies of Motion: SA Talke, M T Stacey

The Importance of the Physical Setting in Determining the Interaction Between Salt Marsh Accretion Rates and Climate Variability: A S Kolker, S L Goodbred Jr, J K Cochran, A Beck

Winter Processes on New England Salt Marshes: Ice Rafting, Ice Loading and Latitudinal Variation: B A Argow, D M FitzGerald

The Biomantle Concept: Application to Marsh and Intertidal Zones: D L Johnson, D N Johnson

Physical Evolution of Restored Salt Marshes in San Francisco Bay: P B Williams, M K Orr, J Lowe

Intrinsic and extrinsic controls on historic saltmarsh morphodynamics in a mesotidal estuary, Suffolk, UK: JR French, H Burningham

Tuesday October 12

Session 4: Intertidal zone biogeomorphology, II

Session Chair: Danika van Proosdij

08:00-12:30 Field trip to Atlantic marshes (mesotidal) near Lawrenceville, NS

12:30-13:30 Break

13:30-14:00 **INVITED The Effects of Restricted Tidal Exchange on Intertidal Marsh Geomorphology: I. Surface and Subsurface Controls on Elevation:** D R Cahoon, L K Blum, J Stewart

14:00-14:20 **The Effects of Restricted Tidal Exchange on Intertidal Marsh Geomorphology: II. Organic Matter Process Controls:** L K Blum, D R Cahoon, R Lowers, E Reyier, D Scheidt, R Brockmeyer

14:20-14:40 **Plant Strategies to Cope With Hydrodynamic Forces and Consequences for Plant-sediment Interactions:** T J Bouma, M B De Vries, G Peralta, L A van Duren, J van de Koppel, P M J Herman, B Van Wesenbeeck, S Temmerman

14:40-15:00 **Why has Bioturbation and Herbivory Contributed to Recent Erosion of Saltmarshes in SE England?:** R G Hughes

15:00-15:30 **INVITED A Note on Ecogeomorphology of Tidal Landscapes:** A Rinaldo, A Feola, A D'Alpaos, S Lanzoni, M Marani

15:30-15:50 **Break**

15:50-16:30 **Panel Discussion**

16:30-18:30 **Break and Poster Session 3**

Poster Session 3

Salt Marsh Development and Processes in a Northern New England Estuarine System: LG Ward, BM Burdick

Changes in Tidal Marsh Soil Pattern Affected by Stray Timber Accumulating on the Seashore (North Karelia): M A Zeits, D V Dobrynin

Quantifying Holocene Sea Level Change Using Intertidal Foraminifera: Lessons from the British Isles: Benjamin P. Horton, Robin J. Edwards

Effect of Flocculation on Short-term Sedimentation Rate on Tidal Flats:
M S Chen, S Wartel, S Temmerman

Management of Groundwater Inflow to Wetland (Salt Marsh to Mudflat) for Sustainable Use of Natural Resources for Integrated Aquaculture: An Indian Overview: L P.Chaudhari, A G.Bhole, S P Yawalkar, A S Yewale

The Relationship of Rates of Vertical marsh Accretion to Tidal Range on the Northwest Atlantic: G Chmura

Marsh Hydrology: A Simple Model for Predicting Water Table Elevation Fluctuations: F A Montalto

Preliminary Chronology of the Back-Barrier Islands of the Georgia coast: Implications for Saltmarsh Formation: C R Alexander, A H Ivester, G A Brook, P Srivastava

San Francisco Estuary: Will Restored Tidal Marshes be Sustainable: S Crooks M K Orr PB William

Ecological Effects of Sea Level Rise: CL Auer

Internal structures and developing mechanisms of tidal sand ridges in

The East China Sea: L Zhen-Xia, X Dong-Xing, C Shui-Tian,

Flow paths of water and sediment in tidal marshes: dependency on tidal inundation height and marsh developmental stage: S Temmerman, T J Bouma, G Govers

Wednesday October 13

Session 5: Conceptual and numerical models on evolution and stability of intertidal landscapes

Session chair: Sergio Fagherazzi

9:00-9:40 **INVITED Modeling Elevation Changes in Tidal Marshes: Identifying Controlling Factors Depending on Time and Spatial Scale:** S. Temmerman, T.J. Bouma, G. Govers, M.B. De Vries, Z.B. Wang

9:40-10:00 **Is Biomechanical Warfare Important in Ecology? Ecosystem Engineering as Mechanism for Competition:** B.K. van Wesenbeeck, J. van de Koppel, T. Bouma, P.M.J. Herman

10:00-10:20 **Role of Geomorphology in Governing the Seepage of Pore Water from Intertidal Marsh Sediments:** L.R. Gardner

10:20-10:40 **Break**

10:40-11:20 **INVITED Observations and Ecogeomorphological Modelling of Tidal Environments:** M. Marani E. Belluco, M. Camuffo, A. D'Alpaos, Feola, S. Ferrari, S. Lanzoni, A. Marani, L. Modenese, A. Rinaldo, S. Silvestri

11:20-11:40 **Three-Dimensional Modeling of Intertidal Flow and Transport: Periodic Stratification and its Implications for Sediment Transport:** D K Ralston, M T Stacey

11:40-12:00 **Response of a Bio-geomorphic Model of Tidal Marsh Development to Sea Level Rise and Reduced Sediment Supply:** M L Kirwan, A.B. Murray, L.F. Pratson, J.T. Morris

12:00-12:20 **Modeling Of Tidal Channel Formation for Impact Assessment and Project Mitigation Design:** Brad Hall, Dave McLean

12:20-13:30 **Lunch**

- 13:30-14:10 **INVITED** **Modelling the geomorphic performance of restored tidal marshes:** JR French
- 14:10-14:30 **A Model for Simulating Erosion of Intertidal Mudflat Possessing Drainage Pattern by Runoff:** K R Renaud
- 14:30-14:50 **Towards a Coupled Ecological-Morphological Model of Tidal Marsh Evolution:** S. Fagherazzi
- 19:00 Closing banquet at the Lord Nelson Hotel with talk by Phil Williams