



David C. Chapman
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The 6th

DAVE C. CHAPMAN

Lecture on Coastal Ocean Processes

3:00 P.M., Tuesday, May 7, 2013

Clark Building, Room 507

Reception to follow

Professor Heidi Nepf
Massachusetts Institute of Technology
Department of Civil and Environmental Engineering

“How vegetation alters water motion, and the feedbacks to environmental system structure and function”

For over a century vegetation has been removed from channels and coastal zones to facilitate navigation and development. In recent decades, however, we have recognized the ecologic and economic benefits of aquatic vegetation. It removes nutrients, such as nitrogen and phosphorus, providing a buffer against coastal eutrophication. Marshes and mangroves provide coastal protection by damping waves and storm surge. By reducing flow speed near the bed vegetation can change the pattern of deposition and erosion. Through the above ecosystem services, aquatic vegetation contributes economic benefits worth over a ten trillion dollars per year. This seminar will first summarize basic concepts in vegetation hydrodynamics, i.e. the physical way vegetation changes the mean and turbulent flow field. Second, the seminar will consider several case studies that describe links between vegetation structure, flow, and geomorphology.

